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S. Hartman & Co. Inc.

HOPEDALE NURSERY



FRUIT TREES
VINES *AND*
ORNAMENTAL
SHRUBS

WE HANDLE NOTHING
BUT THE VERY BEST,
AT REASONABLE PRICES

HOPEDALE, ILLINOIS

Prices are not given in the body of this catalogue as you will note, but on separate pages in the back of it. We mean to use this list for several seasons, altering the price each season as trade demands. In this way we are enabled to issue a much better book at the same cost by issuing such a heavy edition of them. We have aimed to make this catalogue worth keeping. If you misplace it or it is destroyed, ask for another, we will be glad to send it. Priced pages will be sent to you regularly

Plants true to Name	<h1>Introductory</h1>	Plants true to Name
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N the spring of 1896 the proprietor began selling nursery stock as a side line, while teaching school. The stock to fill these orders was procured of one of our great Illinois nurseries. The next summer propagating on a small scale was begun in the garden patch at home. The principal thing that

we learned from this experience is that we knew absolutely nothing about the nursery business. The next season we tried to profit by our former experience and planted several hundred grafts. These did well. We also lined out some cherry stock and a dozen pears to try budding. These were

not so successful, and we learned another lesson. From that day to this, we have never ceased to buy experience. Some of it was dearly paid for indeed. Other things were well worth all that we have paid for them. At all events, we started at the ground, and have slowly built ourselves up to our present plane.

The third year that we done business as a dealer in nursery stock, we began to surmise that **all nursery men were not as particular as they should be to have their stock true to name..** Then, for the first time we decided that the only way to be sure of what was packed out to our customers was to grow it. We rented 5 acres near town and began our real career as growers of nursery stock. This was in 1901. From that time to this, it has been our policy to propagate only off bearing trees that have proven themselves to by bearing, to be the sort desired and of especial individual merit. To explain this a little farther; We have here an Elberta peach tree. It is a good tree and produces good crops and good fruit. It is a little crowded and for that reason it does no better. While this tree is so good that people often ask for trees budded off the tree that grew that fruit, yet we know of better Elbertas, some of them 5 or 6 miles away, and of these we get our buds. We follow this line in all our propagating, ornamentals as well as fruits. We never have bought scions in the regular way. Of course we do sometimes hire the owners of trees to cut buds and scions for us, when we know of the merits of their trees, or have good reason to consider them competent judges in these matters. It is out of the question for the proprietor to do all of this work now, yet we try to see to it that parties entrusted with this work know what they are about.

In all lines we have endeavored to give the **Best for Results** rather than either cheap or nice looking stock. It costs us more and our shipments sometimes do not please the eye as well as some other stock, but when the results are taken as a view point, we take a back seat for no concern.

For years we doubted the wisdom of our policy and scores of nurserymen have told us that we could not succeed on that basis. "People want nice "stuff" and by the time it bears they will forget of whom they bought it and you will get no thanks for your pains and be so much the poorer." For years it looked as though this prediction were true. We never varied from our aim to give the best for results, however, and it looked as though we would be forced to go out of business as our profits were not sufficient to keep us going and admit of the necessary expanding. We were determined to treat people right, or not do business with them at all. It seems that this policy has finally won out. Our business has steadily increased till now we are doing more business than we had ever expected to do, yet it is not now as profitable as we hope to make it.

We do not wish to be understood to state that we do not propagate off our nursery rows at all. Usually when we get a start off bearing trees, we do use these for propagating stock for one, sometimes two crosses, then go back to the bearing trees to start out again. This prevents this young stock from getting into the wood-making habit, as it is likely to be the case where young stock is constantly used to get scion wood from. We have never propagated several valuable sorts because we could not get a start from stock that we knew was all right.

Location

We are on the Chicago & Alton R. R., and our packing grounds are only $2\frac{1}{2}$ miles from Mindale, a station on the Illinois Traction System (Electric). We can ship either way. We have the **National Express Co.**, here. We have over an acre in our packing grounds here in town. Some little stock is grown here, but our principal nurseries are one and one-half miles northwest from our office. We have 82 acres devoted to the business. **Twenty Acres in Actual Nurseries.** Most nurserymen, when they give the number of acres in their nurseries, name all of the tract that they operate. It must be understood that land cannot be planted in repeated crops of tress any more than it can be repeatedly planted in corn. After a crop of trees is taken from a field, it should be manured, a crop of corn raised, then a crop of oats and seeded to clover. Usually we cover with another coat of fertilizer and sow $\frac{1}{2}$ ton of Rock Phosphate on this clover when it is turned under to put it into prime condition. Of course this rotation must be varied sometimes, but where possible we find this the best we can do without too much expense. This makes our ground better with each crop of trees, and a three years' rest from trees cuts out the possibility of any fungus disease remaining in the soil to contaminate the new crop of trees. This care is necessary for our own welfare as well as for the good of our customers. Better trees and more of them to the acre. It will readily be seen that the nurseryman has only 1-3 to 1-5 of his land in trees at one time, unless he constantly buys or rents new land to grow succeeding crops on, and then the chance is that his land is not in the condition that it should be in.

We are often asked how long it takes to grow a crop of trees; This varies with the sort and accidents. Peach blocks are usually cleared in two years. Apple in three years, Pears and Cherries in three or four years. Evergreens in three to eight years, according to the size that one wishes to let them attain. Seedling beds are usually cleared out in one year. Grapes require one to three years, according to the age at which they are sold. Ornamental blocks are allowed to remain from two to ten years, according to the stock and the size that one wishes them to attain before marketing. Perhaps the most of it remains in the blocks for three or four years after transplanting.

Agents

We employ no agents—we mean the regular tree agent. We do employ local salesmen to take orders from their acquaintances. We know that this class of men will not promise more than we can fill simply to take orders, as do the tree agents. We instruct our salesmen to make no promise that this catalog does not make. We will thank anyone to advise us of any salesman purporting to sell our stock, that is making extravagant promises. We prefer to do a little more than we promise rather than promise more than we can do. Our customers feel better about it. So do we. What is better yet, we remain friends longer by this method.

Honesty

We do not claim to be the only honest nurserymen by any means. We do claim that the opportunity to be dishonest in this business is very great and that many men cannot resist the temptation to put in the wrong sort when the sort required is not at hand while plenty of others are in surplus. It requires a fixed purpose to be able to burn hundreds of trees and buy as many more, no better trees either, but the sorts that your customers demand. This is just what happens to every nurseryman almost each spring. The temptation to put the right label on the wrong trees and save this expense and trouble is great, as you can well imagine. Many nurserymen cannot stand this pressure and yield to it. Again an order calls for some Minkler Apples. Almost all trees of this sort are crooked as are some of the other of our best sorts. You have a particular customer who wants **nice** trees. Plenty of Clovert, or some other nice growing sort are at hand. It is a great temptation to put in these fine trees which are so much easier to raise, especially since you know that your customer is so anxious to have nice trees. We are in the habit of packing what the order calls for, even if we must alter the size. Our bunches of trees do not look as well as the other fellow's stock, yet we feel sure that we have done right, even though the customer is not so well satisfied at the start. We want this understood that we may not appear in the wrong light.

Stock

As stated above, we do all of our own propagating, using scions or buds only off trees or plants that **Have Proven Themselves Excellent by Bearing**. It costs something to do this. Often we could buy scions for less than one fifth of what it costs us to get them that we are sure of. Is this worth anything to **You**, Mr. Customer? Following we briefly describe the methods of propagating some of the principle items that nurserymen grow.

APPLES, are usually propagated by **Root Grafts**. No matter what Mr. Agent tells you, you will find that 90 percent of all apples are grown in this way. The most common method is the Whip Graft. By this method, a seedling apple is cut up into 2 to 5 pieces, and a scion is grafted on it. The piece of root is from 2 to 4 inches long, while the scion is 6 to 10 inches long. The grafting is done in the winter, the grafts being tied into bunches of 50 or 100 each. These bunches are packed in sand till planting time when they are grown together. In planting, they are planted so that only about one inch of the scion remains above ground. Where everything is favorable, most of them throw out roots along the scion the first season, and when the tree is two or three years old and ready to sell, it is practically on its own roots. We have often pulled the original piece roots off at digging time with the fingers—so little has it to do with the root system of the tree. **Another Method**. Sometimes nurserymen buy a light grade of seedlings and line these out in the spring. By August these are usually large enough to bud. These are the true **Whole Root** trees that agents said so much about a few years ago. At two years from the bud these are nicer trees than the root grafts. The reason is plain. These seedlings get established in the rows the season that they are budded, while the grafts must establish themselves. The age of the grafts is counted from the time of planting while the age of the buds is counted from the spring that the bud starts to grow, or a year after the seedlings are planted. We very much prefer the root grafts since they are on their own roots, or at least have some roots from the scion, while the budded trees are altogether on seedling roots. These seedling roots are very variable, by far the greater part of them being much more liable to Aphid and Gall attacks than the commercial sorts of apple. We have some customers that live in so rigorous a climate that the only trees they buy of us are Wealthy, White Pippin and the most hardy sorts known. On these they graft the sorts they want. They say that this is the only way that they can grow apples successfully. You will readily see that it is very important in rigorous climates to have the hardiest roots obtainable. This certainly is not Seedling roots—the **Whole Root**. Do not be deceived into paying two prices for an inferior tree.

PEACH. Seed of these are planted in nursery rows in the fall. By the next fall they grow large enough to bud. Peach trees are sold at one year from the bud. All peaches are budded, as grafts of these grow poorly.

PEARS are usually budded. Sometimes they are grafted, but they do not graft very well. We grow almost all of our stock by budding. So does everyone else.

PLUM and CHERRY are always budded. They succeed poorly as grafts and, they are bad to "Sprout" or succor up. They are budded on the stock that does not sprout and if not planted too deep, they will never be troublesome in this way. So all of this "whole root" fuss is centered on the apple, as everyone buds the other fruit trees. We have endeavored to show that the Piece Root Graft is the best method to propagate the apple, so this talk was all for the purpose of deceiving the uninitiated.

ORNAMENTALS, are grown in a great variety of methods. It would take altogether too much space to describe these methods as it applies to the many sorts. Some are grown from seed, some from cuttings, others are grafted or budded, to get certain sorts. Some are layered while still others are rooted from cuttings by florists under glass and then sold to nurserymen to line out and grow on to a size suitable for sale. It is a wide art and an interesting one, this art of propagating plants. And, let us say that it is an art that requires much study and experience to do this with a degree of certainty. Failures are so many as to be rather the rule than the exception with the beginner. Yet it is extremely interesting and elevating. It is a study of nature and of the nature of growth of the individual sorts and supplying the proper conditions.

We do not wish to be understood as stating that we grow **all** of the fruit trees that we sell. No nurseryman can do this. Sometimes we have failures in some sorts, sometimes our demands for a certain sort is way beyond what we had expected it to be at the time we planted that sort. Some other fellow is long on the sorts that we are short on, we are long on some of his short items. We make exchanges, or buy and sell. Our aim is to grow all that we expect to need.

Terms and Conditions

Packing is done in the most thorough manner and for this we make no charges. All packages sold on conditions mentioned in this catalog will be delivered to the carriers (Railroads) Free of cost.

Ten of one sort at ten rates. Fifty, at hundred rates, except seedlings and such items as are packed in hundred bunches. Five hundred at thousand rates; 5,000 at 10,000 rates. We are often asked to pack one tree of each sort of apples at ten rates, if ten trees are taken altogether. This we do not like to do as all fruit trees are tied ten in a bunch above the 3 to 4 foot size, and it necessitates the opening of bunches. If a considerable amount of stock is used such as required for a full orchard, we will make these at ten rates, if the order is scattering, or at hundred rates if the order is in tens of a sort. This applies to orchard lots of 50 trees or up. Larger lots had better be submitted for special quotations, which we will render promptly. It is difficult to state terms so explicitly that it will cover all cases—there are so many conditions, so many methods of packing in the different sorts and grades.

Cash is required before shipment, except by agreement, or from known customers with established credit. 6 percent is charged on all bills not paid in the month in which purchase was made. We cannot vary from this rule.

Discounts. Where the full amount of cash accompanies the order, we allow a discount of 5 percent if the order is at **one** and **ten** rates, and amounts to \$10 or over. 10 percent on orders amounting to \$20.00 or up. Orders for \$30.00 or up should be submitted for special price.

Shipping Directions. We prefer that you designate the manner and route that stock is to be shipped, whether by freight, express or mail, also the route to be sent. If left to us we will do the best we can for the interest of our customer but will assume no responsibility.

We Assume No Liability for stock lost in transit. We take a receipt from the carriers that stock was delivered to them in good order but there our responsibility ceases. We will do all in our power to help the customer out, either in case of

delay or loss enroute. We will be glad at any time to start a tracer after stock from this end of the line, when notified of delay by customers, or help you file and secure your claim if you suffer loss.

Releasing. The freight on nursery stock is considerably lessened if it is released to \$5.00 per cwt., in this district, and \$3.00 per cwt., in the southern district. This we always do unless we have instructions not to do so. This release only applies to cases where the stock is lost or damaged enroute. The carriers can only be held for the amount named in the release. In all of our shipping we have only had one case where this release lost us anything.

Guarantee of Genuineness. We guarantee all of our stock to be **true-to-name**, and in case any item should not prove to be so, we stand ready to replace it with the true sort, or return the purchase money, as the customer elects. We are not infallible, only very careful. We want our customers to report an item that is not what they bought. We want to correct it. It is mutually agreed that we shall not be held responsible for any greater amount than this.

Substituting. We do not substitute sorts so long as it is possible to avoid it. We would like for every customer to state in their order whether or not we may substitute some sort of the same season and as nearly like the sort ordered as possible, if out of the sort ordered. When we do this, we always label the true name of the sort put in. In case your order prohibits substituting, we do not substitute. In case that we substitute without your consent, we do not ask you to pay for the sort put in, unless you can use it. Please bear this in mind.

Replacing Stock. We aim to send out only good thrifty stock. When you unpack your stock should you find that some of it is not good, please report same at once and we will either send stock that is all right, or your purchase price, but we reserve the right to have the stock returned that we may see that it is bad. We try to be very careful to not put in poor stock, but in the rush of the packing season we are so rushed that it sometimes **does** get in. We want these reported. It is our aim to treat our customers right. When we deliver good stock our responsibility ceases. So many conditions over which we have no control may arise that it is unfair to ask us to stand these accidents, such as drouth, careless planting, poor care, stock, rabbits, etc. Should it develop that the stock was at fault, please report and we will do all we can for you.

"Nice Stock." Whenever you order a mixed lot of trees, especially apples, and they are all nice, smooth, straight trees you may be sure that you have not got the sorts ordered. Sorts do not grow alike. Minkler is crooked, Jonathan whippy, Willow Twig brushy, and so on through the list. Yet all of these sorts are of the very best to plant. Do not object to little defects. The "crooks" will soon disappear and you have what you wanted in sorts. We cannot fill orders that call for nothing but straight trees, if crooked growing sorts are included in the order. We won't deceive you and we cannot remedy nature. Our stock is as "Nice" as the same sorts of other growers—only we are in the habit of packing what the order calls for.

Sorts. We endeavor to keep in stock throughout the packing season all sorts listed. We have a lesser stock of many other sorts. Our connection with other nurserymen is such that we can secure any sort desired, usually at a much less rate than agents price.

Plants by Mail. Small plants go by mail at a very low rate. The rate on this class of stock is 8c per pound or 2 ounces for 1c. By the time that packing is added a pound of seed will usually weigh 20 ounces or 10c postage. Be sure to send enough to cover postage, if you want us to mail your stock. If too much is sent we will return it.

Visitors are always welcome. It is a pleasure to show visitors over our fields and packing grounds during the summer. At packing time our force is so busy that we can not take the time with visitors that we would like to, but come when you can and we will do the best we can for you.

Spraying

So much of the success one has with the growing of fruits and some of the ornamentals depends upon spraying, that we thought best to add a little chapter on that subject in this catalog. It seems that the average grower knows so little of the principles of this necessary work that it will not come amiss.

We shall not attempt to go into details, but point out the central points. Those who wish to know more of the details should apply to their state experiment stations or the Department of Agriculture, Washington, D. C. They will furnish you with detailed and reliable information free. These stations are established to help you out of your troubles. Consult them. They will be glad to render you service, and their advice is reliable as they serve no concern, but are the peoples' servants.

Enemies of plants may be divided into three classes. Insects, Fungoids and Bacteria. These are the cause of most ills in animal life as well as plant life.

Insects may be divided into two classes; Biting and sucking. We really have then, four classes of evils to plant life to combat. **Eating Insects** are easily controlled with poison. **Paris Green** or **Green Arsenoid** are probably the best poisons to use. The thing to learn, then, is when and how to spray and we will take that up briefly later on. **Sucking Insects** will be little affected with poison of this nature; as they stick their beaks through the outer bark and suck the sap, so do not get the poison. For this class of insects we must use a **contact poison**—one that kills by coming in contact with their bodies. **Petroleum Emulsion** is perhaps the best to use in most cases, but we will mention others in their proper place.

Fungoids are the moulds or mildew that attacks, usually the leaves and fruits, doing little injury to the plant only as it weakens the plants through the leaves being unable to do their duty. Besides the leaf injury, it is usually some fungus disease that causes **scabs** and **rots** of fruits. Perhaps the most useful fluid in fighting this is **Bordeaux Mixture**. We will speak more of this later.

Bacteria are for the most part in the tissues of the plant as in blight so that there is but little to do, excepting to cut off the affected part and destroy it to prevent further infection.

We will speak briefly of these remedies. **Paris Green** is an arsenoid, or its poisonous properties are due to the presence of arsenic. It is more reliable than London Purple which is also an arsenic poison, but is more likely to injure the foliage than Paris Green. The only fault we have to find with Paris Green rests in its not always being of the same strength, yet we have found the various makes of this to be more reliable in this respect than London Purple. Large orchardists usually compound their own arsenical poisons. In this way they know to a certainty that they have a given amount of arsenic in the compound, but the smaller users of sprays can not readily do this, so we recommend Paris Green or Arsenic of Lead. This last is higher in price but more reliable as it is not a by-product but made for the purpose of using as a spray ingredient. For prices see priced pages of this catalog, as we handle it. The preparation of each is the same. For spraying the **Apple, Pear, Cherry and European Plum**, the solution should be made at the rate of one pound of arsenate to 200 gallons of water. Get the finest ground product that you can secure, as it settles less. Arsenate of Lead is much less liable to settle than Paris Green. Do not guess at it. Weigh out your poison, dissolve it in a little water. This is important, since it is very difficult to dissolve it thoroughly in the whole amount of water and you will be ready to go to work so much sooner and better. Then pour it into the required amount of water to make it the proper strength. If you are using a fifty gallon barrel to spray with, $\frac{1}{4}$ pound of Paris Green will be needed, and so on. For potatoes it may be used as strong as one pound to 150 gallons, although the 200 gallon solution is usually as effective and less liable to injure the leaves. For **Peaches, Japanese Plums and Nectarines** it should not be used stronger than one pound to 300 gallons. We want to caution you about spraying the Peach and Nectarine when in full leaf. It requires care to avoid injuring the leaves, which are very susceptible to injury by any arsenate spray. They stand it much better when the weather is not too hot and when they will not have to go too long without a rain after the spray is applied. In spraying these we advise the use of twice as much by weight of fresh lime, as is used of poison, thoroughly slackened

and strained through a coarse sack, to prevent its clogging the nozzle of the pump, added to this mixture. It does no harm and lessens the danger of injury to leaves. It also makes the solution stick to the leaves better.

Petroleum Emulsion is made as follows: Cut up 1-2 pound of Whale Oil Soap. Any good hard soap may be used, but we strongly advise the use of the whale oil soap for several reasons. It has considerable insecticidal and fungicidal virtues in itself, and the emulsion made from it, if properly made, will keep for years, while the mixture made of the ordinary soaps will not keep so long or be quite so good. Add to the soap 1-2 gal. of water, soft water is best. Bring to a boil so that the soap will all be dissolved. Take away from the fire and add 2 gals. Petroleum and at once begin to agitate this. The best method of doing this is to remove the nozzle of your bucket spray pump, and pump the solution back on itself as rapidly as you can. If this is kept up diligently for at least 5 minutes the emulsion will be complete. It is not well to quit as soon as you think that it is thoroughly emulsified, as it appears to be done before it really is. In the absence of a pump, the emulsion may be accomplished by stirring vigorously with paddles. If this method is followed, it requires at least ten minutes to get the emulsion thorough. When finished the emulsion looks very like the fresh milk from a fresh cow. The amount swells as it emulsifies to nearly four gallons. This is the cheapest and perhaps the best all-around contact poison to use. In spraying it is diluted to 1 qt. emulsion to 8 qts. soft water for the strongest solution safe to use on trees or plants in leaf, although it is sometimes used 1 and 3 when the tree is dormant. The ordinary dilution is 1 qt. of emulsion to 15 qts. of water and we have found this strength all right and not at all likely to injure the plants, yet strong enough to do the work. We would not recommend that you use it stronger than 1 to 12 in any event. This emulsion of petroleum mixes with water as readily as milk does. If your pumps have rubber valves, as many of the cheaper pumps have, be sure to pump a quantity of clear water through it when done using it, or the petroleum will swell the valves so that they will not work. Never leave this solution in the pump especially if the valves are of rubber.

Bordeaux Mixture. This is perhaps the most important of the spraying solutions, since more ravages are suffered at the hands of the fungoids than all the other losses put together. This valuable mixture is made as follows:

Dissolve a quantity of Copper Sulphate (Blue Vitrol) in an earthen jar. It dissolves slowly without heat, so we usually suspend it in a burlap bag as near the top of the jar as we can, as this is heavier than water and will sink to the bottom as soon as dissolved. If all is put in the bottom, the water about it will become so full of it that it will dissolve much more slowly. In doing this, measure your water and weigh your blue stone. Suppose that you wish to dissolve 12 lbs of the Copper Sulphate, then put in 12 measures of water, say $\frac{1}{2}$ gallons, as this is enough to dissolve it fairly soon and yet makes a strong stock solution. This will keep indefinitely and may be used along as needed. We keep our stock solution in the cellar. When the time comes to use it, get some unslacked lime. The lime should be freshly slacked—it is better. It should be slacked the night before you want to use it to give it time to slack thro. For every 12½ gallons of solution you wish to make, put in 1 lb of the copper sulphate and 1 lb (Before it is slacked.) of the slacked lime. The lime should be poured through a coarse burlap so as to keep the lumps out. Use a glass, wooden or earthen vessel to dip the copper sulphate solution with as it eats anything made of iron or galvanized. This solution cannot be used in an iron or galvanized sprayer. It will ruin it very soon. See to it that all working parts of your sprayer are made of copper or brass. Then you can use it readily. For a barrel of 50 gallons of water, it takes 4 lbs of each lime and the Blue Vitrol. The solution should be kept stirred to prevent it from settling. Almost all spray pumps of today have a good agitator for this purpose.

Sulpho-Tobacco Soap which we advertise in this catalog is a most convenient preparation. It is a contact poison, altho not so strong as the above mentioned emulsion. It is a fungicide, too; it is so easy to prepare and apply that many of our customers who have only a few roses and currant bushes to spray, use it altogether in preference to the cheaper mixtures that are much trouble to prepare in a small way as in a large lot. All the preparation necessary is to dissolve it in hot water at the rate of 1 oz. to a half gallon of soft water and it is ready to use. It may be used as a spray, dip or sponging solution with equal satisfaction.

Tobacco. This is a contact poison and the form usually used is the tobacco dust. This is cheap and can be used to make a strong tea or, in case of root insects, put on dry and leached down to the roots on which the insects work.

We have mentioned the principal remedies used and the methods of preparing them. We must state that these are not nearly all the remedies used, nor the best in all cases, but these are the most general in use and enough of each class to answer the purpose. The mention of so many remedies of the same class would be confusing to the amateur.

We will now mention a few of the principal pests and the best method of combating them. As the apple is **king of fruits** we will take up this first. During the fall or winter prune the trees well so as to lessen the work of spraying, also to enable you to do it more effectively. This is only the ordinary pruning. Paint all wounds of $\frac{3}{4}$ inch and up, to preserve the wood and to keep out the many germs that lurk in such places. Prune the limbs up close to the trunks. Never leave stubs to rot and spoil your tree. Early in March clean up all trash under the trees and about them as these are lurking places for spores for fungus diseases. By burning this trash you will also destroy many insects that are hiding during the winter. Remove the roughest bark, and in fact, "clean up." Much of your success depends upon this cleanliness on and about the trees. Brush and rail piles, loose bark on posts or trees and the like, form the best of places to hide in for some of the worst enemies of our fruits. These remarks apply to all fruits. Early in March, as the conditions will permit, spray the trees with the Bordeaux Mixture. Let this work be thorough, and endeavor to cover every part of the tree. This is for the purpose of destroying all fungus spores that are harboring about, and, if well applied, remains on a long time to do its work. This is the "ounce of preventive," and it is worth a good many pounds of cure.

The next spraying should be done just after the blooms (petals) have fallen. This time use the Bordeaux Mixture and add to it arsenoid, or **paris green** at the rate of 1 lb to 200 gallons of water, that is, the bordeaux mixture to be considered as water. In this way you may kill two birds with one stone; you are combating further against fungus pests and against the eating insects also. The distinct idea of this spraying is to get the first crop of the **coddling moth**. This is the moth that lays the eggs that produces the maggot which makes the fruits fall. In other words, "wormy apples." This is by far the most important application for this pest. We will tell why it is best to do it at this particular time. Almost all of the worms gain entrance to the apple at the blossom end. Immediately after the petals fall, the blossom end is open. It is easy to get a little of the poison into it. Soon it closes and your opportunity of getting the poison just where it is needed is gone. This poison remains there to kill succeeding broods of this pest. This spray, if well done, will do work for you all season. It is obvious that the important feature of this spraying is to see to it that you get a portion of the poison into the blossom end of each baby apple as nearly as may be. An experienced hand at spraying once told the writer that hundreds of dollars had been wasted in spraying the orchard of which he spoke before they learned that this must be done at just this time, that is, after the petals fell and before the calyx closed up. A few days too late will not do at all in this case. Do it thoroughly, and at the right time. These two sprayings done thoroughly and at the right time will almost insure you a crop, although it is much better to spray once or even twice more. All of these later sprayings should be made with the combined arsenoid or paris green and Bordeaux Mixture. About ten days or two weeks after the first spraying, a second might be made as a safeguard, especially if the weather has been rainy as is likely to be at this season. If a heavy rain follows a spraying, it must be done over. The only way to be safe is to "keep everlastingly at it." If you plow your corn and turn up a lot of young weeds and a rain follows immediately, what do you do? Why, plow again, of course. So it is with spraying. If you sat down and said, "Well, I plowed that corn and now if it gets weedy it is not my fault," you would surely have weedy corn. If you do the same with your fruit, you will surely have wormy apples. If you can have a nice day after your spraying, it is not likely that an ordinary rain will spoil all of its effects. A few hours of good weather will fix it so that it requires a heavy rain to wash it off so badly that it will lose its good effect. Choose a still, sunshiny day if possible. Be thorough.

Should Canker worm or other leaf eating insects appear at any time, spray with arsenoid. You will lose nothing to mix it with the bordeaux mixture as

before. Should the **Green Aphis** (lice) or other sucking insects appear, spray with the Petroleum Emulsion, or Sulpho-Tobacco soap. Should your fruits be attacked with any of the rots, the Bordeaux Mixture is the solution to use, only let us caution you to do it early—as soon as it appears. Later it will be very much more difficult to check it. There are so many of these, and they work so differently that we would advise that you mail a few specimen fruits, with leaves and twig attached to your state experiment station. They will give you just the advice that you need. Describe the action as well as you can, also. It will help them to give you advice that will be more effective.

If Borers appear just above the ground as they often do on young trees, dig them out with a knife and piece of wire. The first 8 or 10 years of the life of a young orchard this search for Borers should be made twice each year; in late June or early July, and again in early September. In this way they may be removed before the tree is much damaged. Their presence may be detected by their castings, which is shredded wood on the ground under the holes.

Pears. All that has been said about apples applies to pears in a greater or lesser degree. Pears are not nearly so liable to Coddling Moth as apple. They are liable to several ills that seldom injure the apple. Blight is one of these, and spraying will do no good for that as the bacteria does its work in the Cambium, between the bark and the wood where no spray can reach. The only remedy for this that we now know of is to cut out the affected part and destroy it. You should cut a considerable distance below where the injury appears, as the disease germs have usually gone farther than one would suspect.

Leaf Blister. This is caused by a mite and the Petroleum emulsion is the remedy. It may be used as strong as 1 to 8 parts of water. To be effective it must be applied very early in the spring—before the buds begin to swell.

Cherry. The best spray for cherry is the early Bordeaux Spray mentioned for apples and pears. The object of this is to prevent the development of the mold fungus. Another spray just after the fruit is gathered for the same purpose will be an excellent thing. This leaf mold is devitalizing more cherry trees and causing them to be unfruitful than anything that has come under our observation. It is very difficult to do anything in the way of spraying for the curculio which causes the wormy cherries, as the eggs are deposited under the skin of the fruit. The best thing to do for this is to destroy the fruit that falls. If this is effectively done to destroy the first crop, there will be no later crop. We will speak more of this pest under plums.

Peach. One of the worst enemies of the peach is **Leaf Curl**. It is sometimes so severe that almost all of the leaves are dropped. This weakens the tree very much and makes it much more liable to all other ills. This may be held in check by one spraying. Spray with the bordeaux mixture in the early spring. It is important that this spray be applied **before the buds swell**, or it will not be effective. The peach foliage is so susceptible to the applications of poisons of almost any kind that we advise that the utmost caution be used in spraying them when the foliage is on. Some advocate it we know, but our experience is that it is best to not spray while in leaf. If it becomes necessary to do so, use a weaker solution of arsenoid than on apple—not stronger than 1 lb to 300 gallons of water. Peach borers are a menace. They are not as regular in their habits as the apple tree borers, so it will be necessary to look after them oftener. Their presence may be detected by the gum that escapes from the wounds that they make. To tell which wound was made by borers, one must look for the little brown castings, mixed with the gum. Other wounds do not contain this.

Plum. The plum stands spraying much better than the peach, yet needs more care than the apple or pear. The first spraying and general directions as to pruning and cleaning mentioned for the others, is even more important in the plum as it is much given to rot, especially the European and Japanese sorts. Especial care should be taken that all old dried up fruits are destroyed and the tops well opened up to allow the sun to get into the tree. Let the first spraying of Bordeaux Mixture be as thorough as may be. The next spraying should be made just before the blooms open. This may be the bordeaux with the regular strength of paris green added. This last is for the purpose of catching the **Curculio** which is the plum's worst enemy. It is the beetle that lays the eggs under

the skin that produces the grub that causes so many plums to fall before ripe. It is useless to spray for this grub as the eggs are laid under the skin of the fruit. The old beetles that lay the eggs for the first crop of these, feed upon the young leaves at this time and may be killed by this spray pretty thoroughly. As soon as the young fruits set, they feed upon them, beneath the skin, so there is little chance of reaching them with poison after that time. After this the only things to be sprayed for seems to be the rot, as it may develope, and lice. For the former the bordeaux mixture should be used **as soon as it appears**, unless the fruit is so nearly mature that some clearer fungicide must be used to keep from staining the fruit. For the lice use petroleum emulsion as soon as the pests are noticed. What seems to be the most effective manner of holding the **curculio** in check during the season, is the destroying of all wormy fruits, either by collecting them or by turning in a bunch of hungry hogs for a short time to eat them up. Also the shallow cultivation of the soil under the trees. This turns up the insect, as they burrow very shallow while metamorphising, and chickens, birds, etc., will eat them. The simple operation of stirring the soil will also destroy many larva.

Gooseberries. These should also be sprayed very early for the prevention of mildew. The **currant worm** which is so destructive to both this fruit and currants is easily held in check. The trouble rests in that unless you watch closely and early, the pest will have done much damage before you notice it. As soon as the leaves are fully developed, or even before, this pest begins to levy its toll. Look on the branches next to the ground. First a colony will all be collected on the under side of a single leaf. Their presence may be detected by the little holes eaten through the leaves. After a while, as they grow, they scatter all over the plant. They are eaters, so an arsenic poison will kill them. Their bodies are soft, any contact poison will also kill them. We usually use White Hellebore. We dust it on dry. In this way it scatters all through the bushes and if the material is fresh and strong as it should be, it kills them readily. A second dose is seldom necessary, provided that it is applied in time and the Hellebore is fresh.

We wish to say that there is no danger in using these materials so long as used in the strength designated. By close calculation our best experts claim that, in order to get enough poison from apples sprayed three days before, it would be necessary to eat three barrels of apples at one sitting. Professor L. H. Bailey, of the Ithica, N. Y., experiment station, in order to give the matter a thorough test, sprayed a large apple tree till the fluid dripped off of it, then cut all of the grass under the tree and fed it to his horse at one feed, and yet no poisonous effect was noted. Spraying should not be continued till it drips off. You will have less of the poison left to dry on the leaves than if you simply cover them with a mist. This same thing may be noted in grass which is wetter after a heavy dew than after a heavy rain. The latter causes so much to run off.

If we have instructed anyone on the principles of spraying in this short sketch, and they will try to learn more so as to enable them to raise more and better fruit from the same amount of ground and labor, we feel that we have been well paid for our efforts.

Besides the experiment station bulletins referred to, we name the following as helpful to those who want to know more about spraying and insects: **The Spraying of Plants—Loadman**, published by the Macmillan Co., N. Y.; **Insects Injurious To Fruits—Saunders**, J. P. Lippencott Co., Philadelphia. Either may be had through your local book store or of the publishers.

Fruit Department

Perhaps no part of the home place adds so much to the pleasure, health and value of the place as the part devoted to family fruits. We know that it is so easy to mount riding machinery now-a-days and raise "corn, to feed more hogs to buy more land, to raise more corn," and so on, that farmers have often come to look upon the orchard and its care as belittling. It will pay you many times more than any equal area or amount of labor, if you go at it with the same thought and effort and energy that you apply to growing corn. Do it right and it will be a source of pleasure and profit to you. Neglect it and it may not be a source of either.

In the first place, plant at least an acre in apples, thirty to thirty-five feet apart each way. This will require forty-eight to fifty trees, according to shape of your plat. By planting it square, seven trees each way, it requires a little less than an acre and where it can be done, less fence is needed and it is perhaps the best way to plant. Dwarf pears, peaches, plums, apricots, quinces and nectarines, may be planted in the rows between the apples and will bring results in a few years provided you decide that you have the courage to go into your orchard and cut these trees out in ten or twelve years, as soon as the apples begin to need the space, not waiting until they crowd and spoil the shape of the apple trees which constitute the real orchard—even though they be still thrifty and productive trees, while the apple trees have produced you but little fruit up to this time. Of course, three years before this cutting out period, you should make a new planting of these fruits, that they may be in bearing by the time you cut the others out. If you feel your courage would fail you in this matter, don't plant these between in the orchard, but plant alongside or in another plat. Standard pears and cherries should never be planted as between. They are too hard to raise to be cut out and occupy too much space to leave. Many farmers argue that one acre in apples is too much for a farmer's use. We have often noticed that small plats are less cared for than larger ones as a rule. It hasn't cost much, and is so convenient a place to turn calves, sows, etc., into that the trees are ruined for the most part, while a man will think well before he turns stock into, or otherwise mistreats his orchard of fifty to one hundred nice trees. Then, too, the acre is as easily cultivated as the half or fourth acre. Of course, if you had fifteen to twenty-five trees, all thrifty and in full bearing, say twenty to thirty years old, the crop would be sufficient for your wants. But it must be remembered that storms, disease, accident and the like, always claim a part of the trees, while for some cause usually part of the trees are unfruitful. And again twenty or thirty years is a long time to wait for all of the apples you want. You can't count on much off apple trees before twelve to fifteen years, for, suppose the trees begin bearing at five years and bear all the fruit that they can bear, you have but few apples, and twenty trees bearing a peck each is five bushels, while fifty trees with the same load of fruit will produce twelve and one-half bushels.

Selecting a Site

In selecting a site for an orchard, a northeast slope should be favored, and a southwest slope avoided. On the southwest exposure the sun is too likely to force the fruit buds so much in the early winter, and again in early spring, that they will not be able to stand subsequent freezes and frosts.

Directions for Transplanting

In setting an orchard, clear the ground of trash as far as possible before plowing. Plow deep—it gives the rootlets a better chance to develop. In digging holes for trees, where any trash has been plowed under, throw all earth plow-deep with trash, in one pile. Then dig another spade deep of clean dirt in another pile, to put next to the roots. Holes should be two feet or more across and sixteen to twenty inches deep, with loose dirt left in the bottom of holes. We think it best to plant apples, pears and peaches from two to six inches deeper than they stood in the nursery, while plums and cherries must not be planted any deeper than the bud or they will cause much annoyance by "sprouting" or throwing up suckers all about the tree. Lean the tree to the southwest, about to the 1 o'clock sun in April. This partly prevents sunscald on the trunks and the work of the flat-headed borer, which usually attacks sunscalded trees, and serves as a brace against the prevailing winds. You will observe most trees in older orchards lean to the northeast, owing to heavy winds. Work fine, clean dirt about the roots, being careful that all spaces are filled. After the roots are well covered, fill in off the trashy pile of earth in layers of two to four inches, firmly tramping each layer to the top to give the trees solidity against winds. The top layer should not be tramped, to preserve moisture.

Plants true to Name	<h1>Apples</h1>	Plants true to Name
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In selecting the varieties it is best for the family orchard to contain a considerable variety of sorts so as to scatter the season and make it as long as possible, especially in apples. This kind of fruits may be had fresh from your cellars all the year through, if you select the proper sorts. After selecting sorts to fill out your season and especial taste for sorts, it is best to plant all of the rest of one or two standard sorts. This makes less trouble in storing in your cellar and, should you have a surplus, it is much easier to dispose of 50 or 100 bushels of one sort, even if that sort is not the best, than it is to dispose of 1 to 20 bushels of each of ten or fifteen sorts. Select the sorts that you know succeed best in your locality so far as you can. Buy lightly of "Specialties" till you note what they do with you.

SUMMER SORTS

Duchess—Considered king of summer apples. Green striped, with red, flat, sub-acid, almost too sour for eating, but a fine cooker. In season a long time and keeps well for a summer apple, seldom failing to bear; but not so heavy a cropper as Kirkbridge. Should be in every orchard. It is the leading market summer apple.

Early Harvest—Yellow, very delicious eating, but not acid enough to cook, not so hardy as formerly, but pays to plant, an old, well known sort.

Kirkbridge—From what we have seen of this apple, we would say it is the very best early apple for a farmer's orchard. Very young and heavy bearer, a good eater and cooker, in season right after Early Harvest and Red June, and remains in season a long time. Has borne a full crop five out of six seasons; does not keep long enough for a market apple, but for family use it can't be beaten. It is to be regretted that nurserymen generally do not propagate this sort.

Red Astrachan—Tree and fruit hardy. Medium or below in size. Flavor acid. Excellent for cooking. Accounted reliable. Season, August.

Red June—Ripens with Early Harvest, striped, almost covered with red, rather long, heavy bearer, but tree not so hardy as formerly, very mild flavor, fine for eating.

Sops of Wine—An old sort, very productive and hardy, a regular bearer of excellent, mild flavored fruit. Medium striped with red, somewhat conical. August.

Sweet June—Very sweet, small to medium size; a very regular bearer and hardy; an old, well known sort. Yellow. July, August.

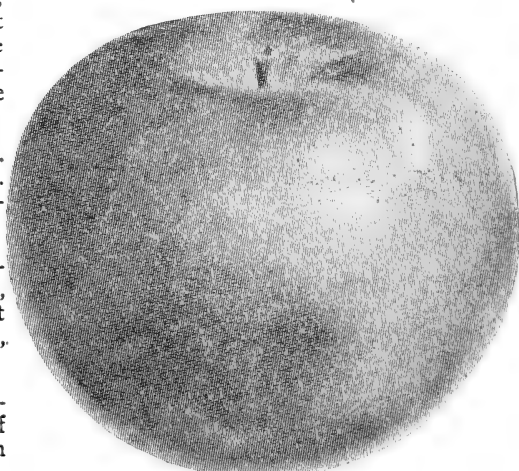
Totofskey—Yellowish striped with red, medium sized, acid. August.

Yellow Transparent—Quite early, of Russian origin; light yellow, above medium in size, sub-acid, fine for cooking, a very fair eater, very hardy, excepting it blights readily, tree an upright grower. Great market apple.

FALL AND EARLY WINTER SORTS

Barley's Sweet—Large, round, striped with deep red. Said to be a rich, sweet flavor. October to December.

Belleflower—Too well known to need description.



Wealthy.

Bismarck—This new fruit is quite a novelty. We have never fruited it enough to express an opinion of its merits. Fruit large, red, late fall and early winter. Bears very young.

Clovert—One of the old timers that will still do to tie to. Large, green covered with yellowish tinge and striped with red. A good bearer and one of the longest lived trees. October to December.

Coreless—This is a novelty. We do not recommend it except as such. Parties of whom we get our scions claim there is seldom even the sign of a core in the apple. Same price as Bismarck.

commonly planted. Season, October till March.

Fulton—An excellent eating apple, should be in every orchard, medium in size, flat, yellow with blush on sunny side covered with dots, quite juicy and sprightly flavor, suiting everyone. Season November to February. Trees are hardy and productive, bearing almost every year. Be sure to plant a few Fultons.

Grime's Golden—This grand sort, now so well known that there is little use of describing it, is one of the very best. Not only because of its excellent bearing and disease resisting qualities



Yellow Transparent.

Dyer—This is an older sort, still good. Of the Grimes Golden type. Excellent eater and cooker. Succeeds well here, but in many places not so well as the G. G. Pippin. Season same as that sort.

Fall Orange—Large yellow apple, very acid, A good cooker but too sour to eat. A beautiful fruit. Trees hardy and bear fruit fairly well.

Fall Russet—A medium sized apple, larger than most russets. Very thrifty tree—needs summer pruning. September.

Fall Winesap—An excellent fruit for both eating and cooking. Greenish yellow ground almost covered with stripes of red, much larger than winter winesap and of much the same flavor. Flesh white, crisp and juicy. Closely resembles Jonathan but larger, although not quite so fine in flavor or appearance. Hardy and productive. Should be more

but the excellence of the flavor is so well known that it is proverbial. "Good as the G. G. Pippin." It is a prize winner and should be in every orchard. Medium large, golden yellow, excellent for both cooking and eating. Season October to February.

Maiden's Blush—Too well known to need any description.

Mammoth Pippin—An old sort. Tree very upright and small in size. Fruit of enormous size, sometimes weighing two pounds. Fine for eating and cooking but not uure in cropping to plant extensively. September.

Northern Spy—An old standard, still one of the best. Fruit large to very large. Quality of the best. Excellent for cooking as well as for eating. Makes good ples as Grime's or Belleflower. Its worst fault is in its late bearing. On rich, black soil, it sometimes takes it a long time to come into bearing.

Once it begins to bear, it seldom fails to produce. Season, October to February. We are aware that most catalogs class this as a late keeper, but in this section it is not.

Pewaukee—An immense sized fruit, having the fault of other large fruits, i. e.: falling off; but it hangs better than most sorts, owing to setting closer to the branch. Tree hardy and fairly productive. Fruit large, dull red, of good flavor. October to January.

Ramsdell's Sweet—Medium in size, red, juicy, productive and hardy; one of the best sweets. September.

Rambo—Excellent for eating; green, slightly striped with red. An old favorite. Not so hardy as in an earlier day. October.

Snow—Another popular apple for eating, excellent flavor, medium in size, almost covered with red. Flesh a pure white. October to February. Trees good bearers and very hardy.

Trenton—This apple we have never seen in fruit, but are propagating at the request of some growers who like it extra well.

Wealthy—An ideal apple. Large, almost covered with red, flat, sub-acid, a fine cooker. Tree very hardy, and a very regular bearer. September. The most popular fall market apple.

WINTER SORTS

Aiken—Native of Illinois. An excellent sort. Somewhat resembles the Jonathan but not so highly flavored nor



Duchess of Oldenburg

colored. A fair keeper. Tree hardy. Season, December to March.

Baldwin—An old sort. Good fruit, and it succeeds moderately here. We would advise the planting of Minkler, King or some other sort that do better here.

Ben Davis—Not a fine quality, but an early bearer and regular producer of nice looking apples. While condemning the Ben Davis, it is only justice to say that it has put more apple in the farmer's cellars and more dollars in the fruit grower's bank account than any other sort, but owing to better quality of other sorts do not plant too many Ben Davis in your family orchard.

Delaware Red—A large, red, very handsome apple, bearing fairly heavily. Very late keeper and well worthy of planting.

Dominie—A well known sort, medium in size, flat, striped with red. Flesh firm and juicy, bears very heavy crops fairly regularly. November to March.

Gano—Of the Ben Davis type. Seems to possess all of the good qualities of that sort without its faults. It certainly is a fine fruit and should be planted extensively. Keeps till spring. Sold as Black Ben Davis.

Geneton—Needs no description. We would suggest that the fruit be thinned in June, as they are in the habit of overbearing and producing small fruits.

Jonathan—Very like Fall Winesap, only smaller, redder, slightly more highly flavored and a handsomer apple. In fact, it is one of the prettiest apples grown. A heavy and comparatively regular bearer, bringing the highest price in the markets. The most popular apple.

King—An old, well known sort that succeeds fairly well with us. A larger, better apple than Ben Davis, but not so productive. Keeps well till March.

Large Romanite—One of the hardiest trees we have, a fair bearer. Fruit large, flat, striped with dull red. Excellent flavor, but it has the habit of dry rotting in the cellar spoiling many specimens.

Limber Twig—A small, green apple, almost covered with red in the sun. Flesh greenish, leathery and much relished by most people. A very late keeper. Trees productive and hardy.

Little Romanite—An old well known sort, bears well. Fruit small, red and showy, and of excellent flavor.

Mammoth Black Twig—A seedling of the Winesap but much larger; not so solid a red and darker than its parent. Owing to its large size, it is not usually so good a bearer, as the winds knock off many fruits. Quality excellent and trees hardier than Winesap.

Michael Henry Pippin—Semi-sweet, green at picking time, turning to beautiful yellow in the cellar. One of the surest bearers. We know of one tree that has yielded from $2\frac{3}{4}$ bushels to 34 bushels of picked apples each fall without fail for thirty-five years. It is to be regretted that nursery men generally do not propagate this variety, as it has few superiors for the farmer's orchard.

Milan—An old sort of excellent flavor, discarded on account of lack of hardiness some years ago. Young trees now in bearing seem to be fairly hardy again. November to April.

Minkler—Possesses nearly as many good qualities as Ben Davis and few of its faults. Medium in size, excellent in quality, a good bearer and hardy. Not quite so large as Ben Davis, and more nearly round. One of the very best sorts for our section.

Moore's Sweet—A fine, large, red apple, bearing heavy crops, fairly regularly. Worthy of planting. A soft, silky flavor. January to April.

Missouri Pippin—A very hardy tree and a good bearer. Fruit rather small and rather dry. To us the quality is not good. A good keeper. Season, December to June.

Paradise Winter Sweet—A very agreeable sweet apple, large golden yellow with a soft blush on the sunny side. Hardy and productive, and a fairly regular cropper.

Roman Stem—This is one of the older sorts well known and universally liked. Each apple has a little bump on the stem—hence its name. It is still hardy and a good producer. Fruit a russet yellow, medium in size and of good quality. Season, December to May.

Salome—Originated in this state. Medium large and a good bearer. Tree healthy. Flavor good. Thought to be one of the best by many good judges. Season, January till the new crop comes, making it one of the best keepers.

Smith's Cider—Medium sized fruit, striped, of red color. Good bearers, keeps well till March.

Talman's Sweet—Par excellence as an apple for sweet pickles or preserves.

Large, flat, yellow. Flesh firm and juicy. December. Tree quite hardy and spreading. It is a bad blighter in appearance, but we have never known a tree to be injured by blight as the disease usually stops in the twigs, rarely going into the limbs.

Utter Red—We have never fruited this sort. It is reported to us by owner of trees off which our scions were taken as follows: Large and handsome, uniform in size, good bearer and quality. December to January.

Vandevere Pippin—An old sort still worthy of planting. Trees long lived and productive. January to March.

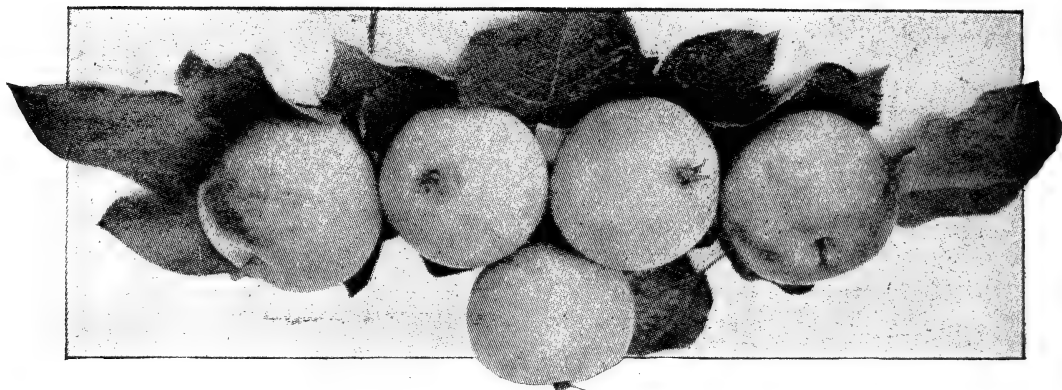
White Pippin—One of the old sorts now neglected, yet we consider it one of the very best. Tree quite hardy, prolific and long lived. Fruit large, green when picked, a beautiful yellow when ripe. Somewhat oval shape. Flavor all that could be desired, and a late keeper. One of its features is that it begins ripening (part of the fruit) in December, and continues until May. Has taken first premium at Tazewell County Farmers' Institute three successive years. Be sure to plant this sort.

Winter Banana—This new apple, originating in Indiana, is spoken of in the highest terms by men who know it. We have never seen it in bearing. A good keeper and high seller.

Willow or Willow Twig—An old sort, hardy and productive. Fruit large, green, striped with dull red. Considered the latest keeper of all well known sorts. We have known fruit to keep in fairly good condition for sixteen months after picking. The flesh is coarse, but has a fairly good flavor when fully ripe. Much of the dislike for the Willow comes from trying to eat it before it is ripe. It is not fit to eat before March or April, usually the latter month. With a few trees of Willow and Delaware Red, you can easily have apples in your cellar until the new crop of earlies is ripe. Trees should be well pruned to allow the sun to get into the tree, or fruits are liable to be scabby.

Wolf River—Tree hardy, and a fairly young bearer. Fruit very large, dull red. Plenty of fruit sets, yet, owing to its large size, it knocks off badly.

York Imperial—One of the very best for this vicinity. Hardy, productive, excellent flavor—tells the story. Fruit large, red and always fullest on one side. This is characteristic of this apple. It is a good keeper. Season, January to June.



Plants
true to
Name

Crab Apples

Plants
true to
Name

Florence—This is a comparatively new introduction. From what we can see of it, it is one of our best crabs. It is good sized, a good bearer, and seems to be less troubled with blight than most crabs. Crimson splashed with red. September.

General Grant—A beauty in fruit and size, but like most crabs, blights badly, especially while young. Very early and prolific bearer. Fruit large, beautiful red, almost black where well exposed to the sun. September and October.

Mammoth Wild Crab—This is to all appearances a cross between our native crab and some of the cultivated apples. In appearance the fruit is like the wild crab, even to the odor and the greasy feeling of the outside of it. In size is where it surpasses all crabs that we have ever seen. **It is fully as large as a Gention apple.** It originated in the west and is not yet introduced in a general

way. We offer it this year for the first time. To us it seems a wonder.

Martha—This is one of the most common of the regular crabs. Medium in size to large. Yellow, partly covered on the sunny side with a beautiful blush. Tree very vigorous and a good blight resister for a crab. Season, August to September.

Whitney—This is the largest of the ordinary crabs. Really a small apple, and so mild in flavor that it is pleasant to eat. Trees very upright in habit. A great favorite with most people. August.

Yellow Siberian—The old crab that our fathers planted, and we all thought it fine. It is a beautiful yeallow, very tart, small and an immense bearer. The tree attains the size of an ordinary apple tree. Season, August to September.

Our Stock is all Labelled True to Name.
When you buy of us you get stock that is
as good as can be grown. Try it. :: :: ::

Plants true to Name	Pears	Plants true to Name
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Pears should be planted in every orchard, and in event of scarcity of room do not make a bad tree for the dooryard. Of the summer pears, Bartlett and Seackle are the standards of excellence.

Bartlett—Large fruit of excellent flavor, ripening last of August and September. The tree is an early and regular bearer of heavy crops, but unfortunately is a bad blighter when young. Plant two or three times as many Bartletts as you want, counting on losing one-half or two-thirds before they attain sufficient age to resist the blight. The trees are not expensive, and if you only succeed in bringing one tree out of five to twelve or fifteen years of age, it is well worth the trouble.

Birkett—One of the best. Fruit small to medium; a regular and heavy bearer of fruit. One of the best blight resisters in the whole list. This pear has but recently come under our notice. We are much taken with it. Originated near here. Use before fully ripe.

Garber—In growth and fruit much like Kieffer, of which it is a half sister, both being sprouts of the Chinese Sand Pear, a hardy tree bearing plenty of worthless fruit. The Garber fruit is not quite so large as Kieffer, more nearly round and better quality and is a money maker in many orchards. October.

Kieffer—The Ben Davis of the pear. Owing to its thrift, beauty of tree and fruit and quality of keeping a long time after gathering, it has forged its way to the front as a commercial pear in the central west. Quality is hardly medium. Trees resist the blight fairly well, but suffer considerably from it.

Lincoln—(of Lincoln, Ill.)—Is a mid-season pear of good size and excellent quality, a very thrifty grower, and, owing to growth of long branches, blight may be cut out of it with a fair degree of success. This must not be confounded with the Lincoln Coreless, a comparatively worthless sort, owing to its blighting badly.

Longworth's No. 1—This is a common fruit, tree and bearer, nothing flashy about it, yet one of the best pears for a farmer to plant, owing to its blight-resisting qualities and trusty habits. Extremely hardy. Fruit medium, round,

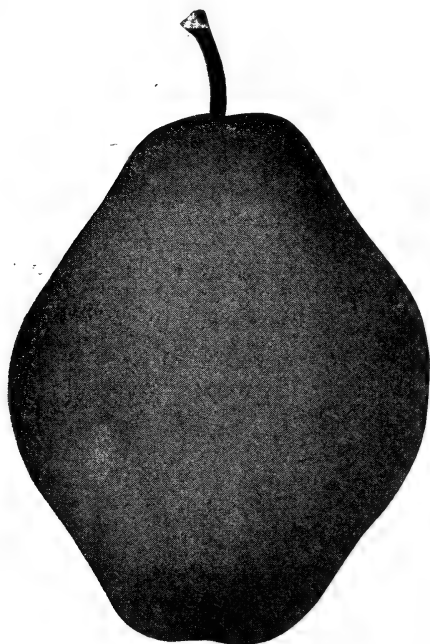
of fair quality. Season September. Trees usually crooked. Not an early bearer.

Matthews—This new winter pear was introduced by us some years ago. It is doing well where planted so far as reported, but seems to be a late bearer. The parent tree stands in Delavan, Ill., is 75 years old and still doing good service, seldom failing to bear fruit. In 1900 it bore a crop of 50 bushels. It is now nearly 19 feet in circumference at its smallest girth and over 50 feet tall. Its fruit is medium in size, absolutely



Bartlett

green and hard when picked, but cans well at that time. Its eating season is from October to February, making it one of the very longest keepers that we know of. It keeps well in a common cellar as apples. Fruit is round, sweet, juicy and of the most delicious flavor. Once it starts to bear and it seldom misses a crop. Well worth planting for those who can wait till it begins to bear.



Kieffer

It seems to resist blight remarkably well.

Seckle—Not near so liable to injury by blight as formerly. Fruit small brownish, rather russety. Of highest possible flavor. As an eater it has no peer. September.

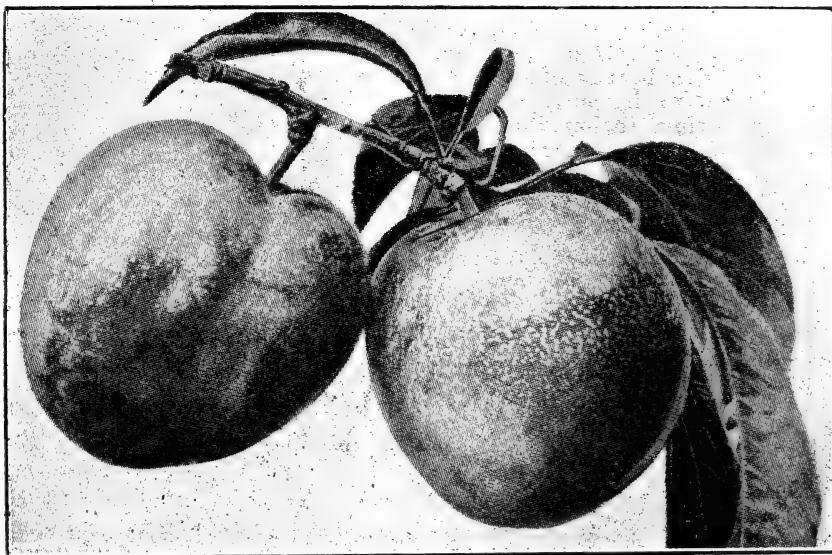
Sheldon—One of the very best. Fruit medium, brown, fine flavored and an immense bearer; midseason.

Sudduth—The most blight resistant variety we know of. Fruit medium in size, of fair quality, but a poor keeper. Late in coming into bearing.

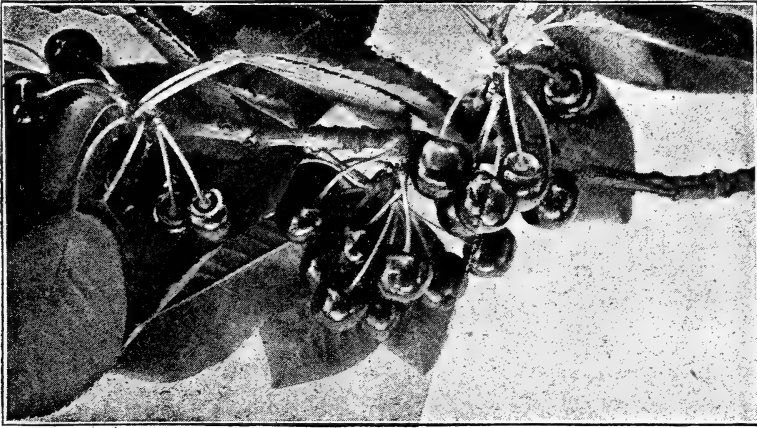
Weihmier Sugar—This is the best flavored fruit we have ever eaten. Trees are thrifty, but moderate blighters. We have never been able to get the proper name of this fruit, so name it after owner of trees from which our buds are procured. Fruit medium to large and of highest possible flavor.

Wilder—Season, July. Seems to be hardy, but quality not nearly so good as either of above. Early bearer.

As Dwarfs, Bartlett and Duchess seem to succeed best. Any pear budded upon a quince root becomes dwarf in habit of tree, while the size of fruit is usually increased. These trees are short lived, but bear very early. They are only valuable between apples to give quick results or in cramped quarters where the larger growing standards cannot be grown. Plant deep—4 to 6 inches below the bud, to allow it to take root above the bud.



Burbank—See page 20.



Early Richmond

Plants true to Name	<h1>Cherries</h1>	Plants true to Name
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Cherries bear early, are a generally liked fruit and very profitable, if the hardier sorts are planted.

Baldwin—A popular sort in the east and some other sections. Mid-season.

Dyehouse—Of the Richmond type, three days to one week earlier and much sweeter than Richmond. From what we have seen would judge it to be as productive as Richmond. Fruit like Richmond in size and color.

Early Richmond—The Ben Davis of the cherry. Needs no description.

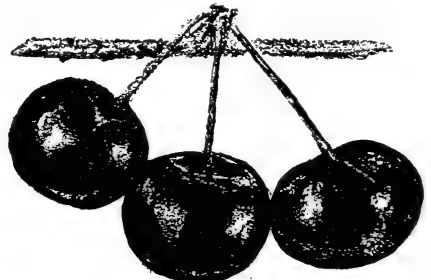
English Morello—An old well known late sort. Fruit large, very dark, excellent quality, particularly valuable as a canner. As a pie cherry has no superior. While this variety did not succeed well some years back, it seems now to be as reliable as any, and as it is nearly one month later than Dyehouse and Richmond, continues the season of fresh fruit for that length of time. Trees seem shorter lived than above.

Ida—This is a sweet cherry, and, like all sweet sorts is not reliable here, but seems to be the best sort that we have seen for this section. In quality it is excellence itself. Ripens about with English Morello.

May Duke—This seems to be one of the earliest that has come to stay. It is said to be much better in quality than the Richmond and as prolific. A little earlier than Richmond.

Montmorency—Two weeks later than above, darker in color and better in flavor. A very regular bearer of heavy crops—more certain to crop than Richmond. The most profitable cherry here.

Northwest—This is a comparatively new sort. It was recommended to us by an extensive grower near here. It is described as a little later and considerable better quality than the Early Richmond and a longer lived tree. Tree seems to be more erect in its habits.



English Morello

Plants true to Name		Plants true to Name
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Plums

Like peaches, plums bring early returns although not so profitable in crop, but much more certain of cropping. Three classes of plums are grown here: Native, Japan and European.

NATIVES

Pool's Pride—A medium sized plum, or rather small, somewhat insipid or tasteless off the tree, but the best pie plum we have ever tasted. A regular and heavy bearer, perfectly hardy and fairly free from attack of the plum's enemies. When made into pie it is equal to cherry, excepting for the distinct cherry flavor. Should be in all orchards, but owing to its rather small size it seems to be little propagated or advertised.

Wild Goose—This is the Ben Davis of the plum, ripening in July and almost certain to crop under any circumstances. It is by far our most common plum. One of its faults is that its flesh persistently clings to the stone.

Wolf—Darker and larger than former and of much better flavor, nearly free stone, ripening in September. It needs a somewhat sunny location and a few spraying with bordeaux mixture to keep off the rot which sometimes attacks it.

EUROPEANS

Blue Damson—A well known little blue plum, very productive and a comparative regular bearer. In flavor much like German Prune.

German Prune—Rather large, oblong, covered with deep blue. Flesh greenish, very firm and parts readily from the pit; keeps well after picking. Season last half of September. Tree is quite hardy and of nice shape, but unfortunately not a regular bearer, but when laden with a heavy crop is one of the most beautiful sights to behold. Fruit is of highest quality for cooking, but must be very ripe to eat well.

Lombard—Larger, richer and a better bearer than above. Color green, almost covered with a purple bloom, ripens nearly two weeks earlier than German Prune, needs to have a sunny

location, and top pruned to let sun in, otherwise it is much bothered with rot.

JAPANESE

We have tested and can recommend the following, although there are probably others as valuable. This class of plums are large, of a very fine appearance and usually very fine flavor. They are more tender than others of the foregoing, but with us Burbank, Abundance and Red June may be relied upon fairly well.

Abundance—Tree upright, fairly hardy, fruit large, very rich, sweet and juicy, yellowish green, splashed—almost covered on the sunny side with purplish red. A good bearer.

Burbank—Tree appears like Abundance in twig and foliage, but is much more spreading and with us a heavier bearer. Fruit large, somewhat flat, firm, of excellent flavor and covered with a bright red. Popularly called the peach plum.

Prunis Simonii—By all odds the largest, finest fruits of plums we have ever seen were of this variety. Unfortunately the tree is very susceptible to attacks of peach tree borer and altogether too uncertain in fruiting to plant more than a few trees. Fruit flat, sometimes measuring three inches in diameter and appearing very like a ripe tomato. A single fruit will soon fill the room with sweet aroma.

Red June—One of the earliest Japans, a very reliable sort, one of the very best Japans. Fruit very large, fairly firm and fine flavored. Color between red and purple. Season July and August.

Wickson—Very large, rather long and pointed, and the most luscious plum that we have ever eaten. Unfortunately it is not sure enough in fruiting to merit extensive planting in this locality. August.

Plants true to Name	Peaches	Plants true to Name
Wonderful—An extra heavy bearer of	Late Crawford—Ripening last of Sep-	tember or first of October is still one

While somewhat uncertain in cropping, are yet one of the most profitable fruit crops we can grow, provided reliable sorts are grown. Never plant seedlings. Even by the most careful selection of seed, and assuming that you would get four worthy trees out of five planted—a thing that rarely, if ever, happens, as usually there is not one really worthy peach tree in one hundred seedlings—yet the difference in the value of one crop of two bushels per tree would be more than enough to pay for all budded trees in the start, not to account the gain on former and later crops. We have men who devote their time to the production and selection of new and worthy sorts, and who do it on scientific, well planned lines. Leave this work to them. Following are some of the sorts that are of value in the farmers' orchards:

Alexander—A semi-cling or half way between free stone and cling, medium sized, very hardy and productive. Fruit slightly flat, of fair quality. One of the most popular of the earlies. Season July 4th to 20th. A native of Illinois.

Blood-leaved Snow Peach—More valuable as an ornament, owing to the beauty of its foliage in spring and early summer. Fruit small, white cling.

Champion—Fruit large and excellent, a native of Illinois. Flesh white and of excellent flavor. Probably the best white fleshed mid-season peach. First of September.

Chair's Choice—A peach growing in popularity. Reported as very large, yellow, with a red cheek. Flesh firm, fine for desert or canning. A good shipper. Healthy tree and a heavy bearer. September.

Indian Blood Free—An older sort, flesh red to the pit.

Indian Blood Cling—This is the popular old Blood Cling is "red clear through" and looks so nice in the cans. September.

Early Crawford—A good old variety of peach ripening in early September. Other sorts are now taking its place. September first.

Elberta—The Ben Deavis of the peach. Fruit large and fine. Flesh yellow and of good flavor, an immense bearer and quite hardy. By all odds the best mid-season yellow peach. Early September.

Foster—Very like yellow St. John. Fruit slightly larger and ripens three days later. Owing to these two last



Elberta

named sorts ripening just ahead of the main crop, any surplus you may have sells readily at a good price.

Late Crawford—Ripening last of September or first of October, is still one of the best late peaches.

Lemon Cling—For a cling, it seems to us that this is good enough. Large, late and a beautiful yellow, with the habit of fruiting some when others do not, and the most delicious cling to use either to eat off the tree or canned. We sell more of this than all other sorts of clings. Ripens in late September and early October. Be sure to plant some of these.

Mayflower—A new, early peach that seems to be in a class by itself. Earlier than the other earlies, very much superior to them in quality and as good in bearing and hardiness of tree, is the way it is reported to us. It is larger than Alexander, or Sneed. Mr. Van Lindley sold the entire crop off his extensive orchard in May, 1910, at an average price of 75c per peck in the orchards in Tennessee. This is more eloquent than any description that we might give. We have not tested it here, but are advised that it succeeds well.

Mountain Rose—This is pronounced by many to be the highest quality as a dessert peach of the whole list. It is a little more tender than some other sorts, but worth planting owing to its excellent quality as an eating peach. Large and delicious. August first.

Sneed—Up to the advent of Mayflower, this was called the earliest. It is hardy, productive, and semi-cling. Not of excellent quality. Early July.

We have enumerated only a few of the good sorts, aiming rather to point out sorts that will afford a succession of fresh fruit from early July until October 10th—a thing much to be desired—than to name all the worthy sorts out of the vast list of sorts catalogued and heralded as worthy of planting. We would advise the planting of only a few of each sort of the very early, as they are poor keepers and much sought by birds and bees.

Other Varieties will be supplied, if desired, but these we endeavor to keep in stock through the packing season.

Six to Eight Feet size we have sometimes, in some sort. These are worth 5c each more than the 4 to 6 feet size. If you want this size we will tell you in what sorts we can do that size. We do not advise the planting of these extra large sizes. Some seasons there is a fair proportion of most sorts that attain this size while in other seasons but few sorts make this growth. This is why we do not list them regularly.

Triumph—Early, fair sized, yellow flesh of good quality, trees hardy and productive. One of the best in its season. July 20th.

Wonderful—An extra heavy bearer of good-sized peaches. Quality not so high as most of foregoing sorts. Last of September.

World's Fair—A few days earlier than Alexander, a trifle larger, otherwise like it. Early July.

Yellow St. John—Very heavy bearer, fruit of good size, flesh yellow, red cheek, ripens August 25th. One of the best of its season.

Yellow Seedling—The parent tree of this is on a farm near here. It is a fairly good seedling peach, yellow, free and of good quality. So far as we have been able to observe, it is the surest cropper of any tree that we have ever known. That is why we propagate it. While it is a good little peach, we do not offer it for its good flavor or size, but because it is so certain to crop. September.

Zipf's Seedling—This is a chance seedling that came up in a most unpromising place for a tree—alongside a brick store wall among all sorts of boxes and rubbish that usually embellish the back yard of a store in a small town. It is of immense size, rather long and firm and possesses a high flavor. So long as observed it has fruited regularly, although not heavily. Considering its environments it has done extremely well. By all means try a few of these. They will surprise you in size and flavor, although not so sweet as some to eat off the tree. September 20.

Nectarines

This excellent fruit is the opposite of Apricot. It has the exterior of a plum and the pit of a peach. It is an excellent fruit, but very difficult to grow in this latitude. It is very subject to attacks of the Curculio. The tree looks exactly like a peach tree.

Apricots

Contrary to the idea that most people have, the hardier of these may be fruited here all right. It is not best to plant the finer, large sorts for results. We have had good success with the J. L. Budd, a hardy Russian sort that crops as regularly as the peach here, and fairly full. It is small, but of delightful flavor. We can supply any other sort, but this is the only sort that we propagate.

Quince

We can supply any sort that grows. We strongly recommend the **Orange**, as this sort is so much more certain to crop than the others that we have tried. We do not propagate any of the other sorts. We do have a nice stock of this sort.

Plants true to Name	Sundries Bush and Tree Berries	Plants true to Name
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DWARF JUNE BERRIES

This excellent fruit is of dwarf habit, a little stronger growing than the currant. It is a good bearer of excellent fruit, but the birds like it as well as we do.

HUCKLE BERRIES

This excellent fruit needs some shade to do best. The fruit is of much commercial value. Our plants are collected from Indiana, where they form the source of considerable income to the owners. We have fruited it some here, but are not prepared to state how successful it will prove here.

BAR BERRIES

This is an excellent shrub and the fruit is small, long, and bright red, borne in immense clusters. It is very tart and is used for the same purpose as the cranberry. Its worst fault is that each berry has two seeds in it. Otherwise it is as good as cranberry. It is a pretty shrub and much used as a fence. We have three sorts. The common is best for fruit. The Thunbergii and Purple leaved sorts are most highly esteemed for ornamental purposes.

MUL BERRIES

Wild Black—This is the best fruit of all mulberries, but is very slow to start out after transplanting. Best of post wood, but very slow growth.

Russian—Too well known to need description. Rapid grower and abundant fruiter. If you do not want it for the fruit, set some for the birds and your cherries will not suffer nearly so much from their ravages.

The value of this as a post wood has long been recognized and large groves of them may be met with, especially in sections where timber is scarce. We can supply them in seedlings for this purpose, but must have time to secure them from our growers as we do not grow seedlings of these in an extensive way.

WILD BLACK CHERRY

This is a native here and used in many ways. Some people are very fond of the raw fruit. It makes excellent wine and "Cherry Bounce." It is a rapid grower, heavy bearer and an excellent food for birds. It should be planted for this reason alone, as our birds are getting scarcer each year as the timber and food supply grows less. The tree is a tall grower and much used in making fine lumber. You can plant it in youth and live to see it grow to a good sized log.

RED HAW

Another of our native fruits now neglected. Out alone it grows into a very pretty, round headed tree of undersize. In the spring it is covered with a pro-

fusion of white bloom—alone worth while. In autumn it is covered with an apple-shaped fruit, beautifully red, edible and used in making preserves. It belongs to the Apple family and is subject to most of its diseases and may be sprayed like it for perfect fruits.

BLACK HAW

A tall shrub or small tree. Covered with a profusion of bloom in early spring. Late in the fall, after frosts, all of our older citizens know how delicious the black berries taste. Its only fault as an ornamental is that it suckers up some.

WILD CRAB

In bloom, admired by all for its beauty and fragrance. It is a wealth in flowers. Its fruit is much relished by many to use in making preserves, although we recommend **The Mammoth Wild Crab** to be used for this purpose. It is described under **Apples**.

WILD PLUMS

Of course, these are seedlings and very variable. We get our seed off the better fruiting sorts. Very fragrant in bloom and usually fruits are not so large, but of excellent quality.

ELDERBERRY

Grows readily and everywhere. A wealth of flowers so fragrant that no passer by can fail to have his attention called to it. In August it is loaded with immense clusters of rich, black fruit, too sweet to use as it is, but mixed with currants, it makes a most excellent pie. Many people gather it and dry it to mix with Apricots, Currants and such tart fruits all season in pie making.

PAW PAW

Sometimes called Northern Banana. A small sized native tree of rapid growth very soft wood bearing an immense pulpy fruit which is very sweet when fully ripe and much liked by many people. It is difficult to transplant and we advise the purchase of small stock. At home in creek bottoms but seems to succeed well on upland, when established.

PERSIMMONS

This is another of our bottom land fruits that seems to succeed anywhere when established. Not so hard to transplant as Paw Paw. Fruits should not be eaten till very ripe and are best after heavy frost. The best fruits that we ever tasted of these were eaten in winter, during the holiday season, and looked as though they were rotted. Some of these trees are male and it is best to plant more than wanted that enough bearing trees be secured to supply your wants.

STRAWBERRY—RASPBERRY

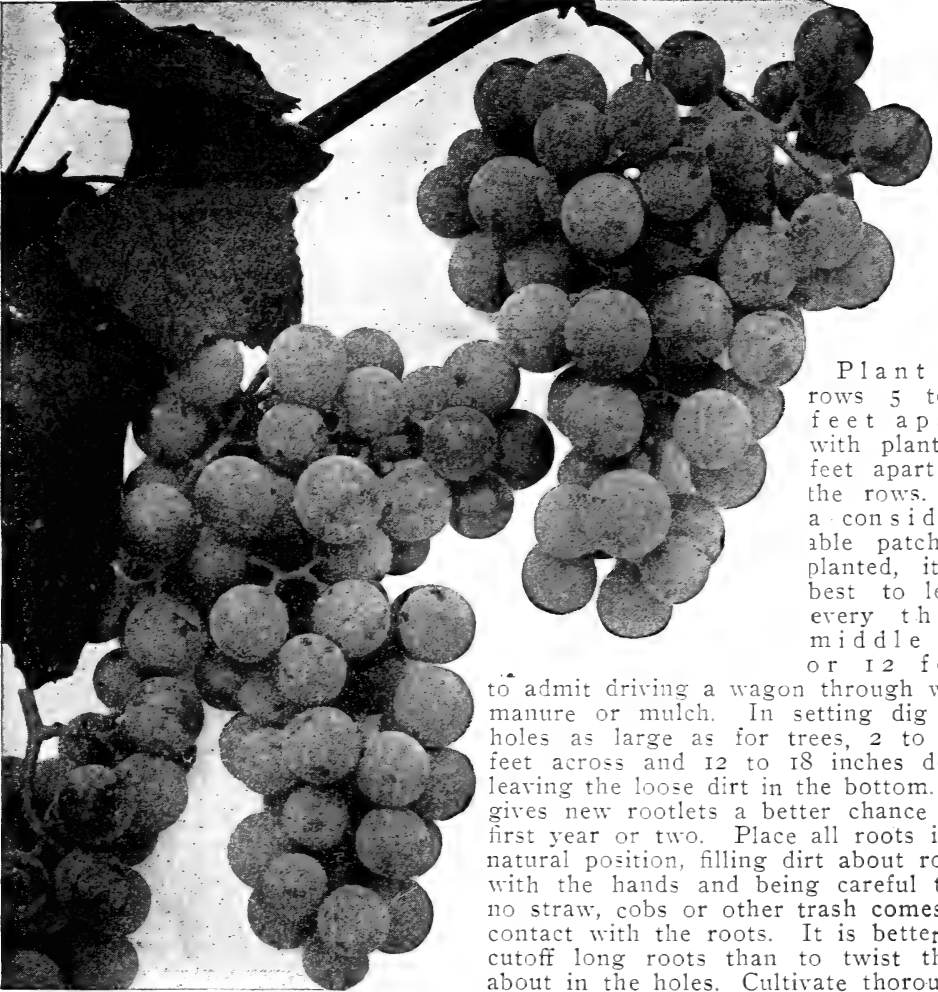
We can supply this cheaply if wanted. We tried it and could make no success of it at all. We have never spoken with a man who has succeeded with it. We do not recommend it. Same is true of Japanese Wine Berry.

Small Fruits

Give small fruits good soil, good care and plenty of room and you will be well rewarded for your efforts. Give them little room or care and you will be much disappointed. Twenty-five raspberry plants of some good sort with plenty of room and good care will, under ordinary circumstances, produce from 15 to 30 gallons of fruit, while 100 plants neglected are not likely to produce above 5 or 10 gallons annually. Five rows of strawberries 20 feet long will, if well cared for, produce 12 to 20 gallons annually, while a matted bed the same width and 100 feet long would probably not produce so many berries and of a much inferior quality. We cannot too much emphasize the necessity of giving your small fruits a good location, thorough care, and frequently change your patch to a new location. If you haven't time to thoroughly care for a large patch, plant only a few plants, and you will find that they surprise you in paying returns for thorough work.

Plants
true to
Name

Grapes

Plants
true to
Name

Concord Grapes

Plant in rows 5 to 8 feet apart with plants 8 feet apart in the rows. If a considerable patch is planted, it is best to leave every third middle 10 or 12 feet

to admit driving a wagon through with manure or mulch. In setting dig the holes as large as for trees, 2 to 2½ feet across and 12 to 18 inches deep, leaving the loose dirt in the bottom. It gives new rootlets a better chance the first year or two. Place all roots in a natural position, filling dirt about roots with the hands and being careful that no straw, cobs or other trash comes in contact with the roots. It is better to cutoff long roots than to twist them about in the holes. Cultivate thoroughly, keeping ground clean—at least for the first two years. After

that mulching may be practiced, although we prefer clean cultivation. It is well to cut off all shoots but one, allowing the plant to put all its energy in making one good shoot the first year. The second year the plants should each have a light stake to hold them up, or, if you prefer, the permanent trellis may be put up this year. Cut off this shoot at 36 to 40 inches, and tie to stake or trellis. Allow four canes to branch out from the top as nearly 30 to 36 inches from the ground as may be—two to bear next year's fruit and two to cut back to one eye to grow strong canes for the following season's crop.

The trellis is an important item in this method of training—known as the **high renewal system of grape pruning**. Since we find this method so much easier and at the same time better than any other plan we have ever tried, we'd advise you by all means to follow it. Use only two wires, the lower one 36 to 40 inches from the ground and the upper one 10 inches higher. The bearing canes are spread from the crown of the plant each way until it meets the bearing cane from

the next plant, or in other words, a bearing cane should cover as nearly as possible the lower wire its entire length. Usually these canes to do this are cut back to from 6 to 10 buds each, according to growth the cane has made and distance to where it meets cane from the next plant. When these eyes put out they usually take hold of the top wire before they get heavy enough to lop over, and the fruit is hanging between the two wires out of the way of chickens and where the sun and air can get to it, lessening danger of mildew and disease and increasing size and quality of fruit. Each eye produces, under favorable conditions, from 2 to 6 fine bunches of fruit, allowing 16 eyes to the plant and 4 bunches to each eye we have 64 well filled bunches—all that the plant can bear.

Each year the old canes are removed together with all the new ones except the two strong ones grown for the year's fruiting and two stubs cut back to one eye as near the original crown as possible for the next year's bearing canes. This simplifies the matter of grape pruning very much and at the same time produces the best fruit with the least effort of any plan we have tried. As to sorts we will only consider a few.

Agawam—Is a large bunched dark red or brown grape. Berries are large, meaty, free from sour pulp, has a tough skin and bees never attack it. In flavor it is sprightly, moderately sweet. Very productive. Be sure to include a few plants of this variety in your planting.

Catawba—An excellent late sort, but requires good soil, care and season to ripen. It usually ripens here before frosts. A sweet, reddish coppery colored berry, bunches large and rather loose. May be laid on shelves in a cellar and kept fairly well till Christmas.

Thus we see that by mixing up your sorts properly you may enjoy fresh grapes over a long period.

Concord—Is the Ben Davis of the grape; and for a principal patch sort has few equals. It is too well known to need description.

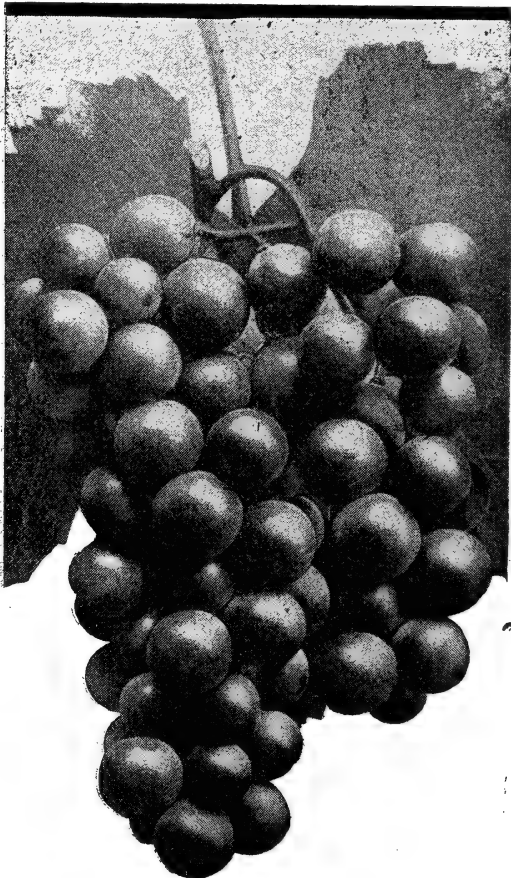
Delaware—A rather small, light red grape of fine flavor. A very fair bearer, ripening nearly a week ahead of Concord. Fairly hardy but a little difficult to get started. A common sort

Early Ohio—A rather small black grape, is very productive and hardy, but not nearly so good in quality as above. It is the earliest grape we have ever grown and should be planted on this account.

Moore's Diamond—Is a large fruit both in bunch and berry, white, and good bearer. It is of excellent flavor and free from sour pulp, and has very few seeds. So far as our experience goes, it is one of the best white grapes for this section.

Niagara—A white grape, very highly flavored and sweet—too sweet for some people's taste. Quite hardy, but not so heavy a bearer as some.

Moore's Early—An excellent fruit, a week or ten days earlier than Concord, bluish black. In flavor, color and



growth of vine it somewhat resembles Concord, only berries and bunch are both larger, and it is sweeter, having the highest possible flavor of this type. Should be in every vineyard.

Worden—Is a seedling of Concord and seems to be an improvement over its parent, being larger in both bunch and berry. It is a few days earlier in ripening its fruit and as reliable as Concord. Try it.

Plants true to Name	Blackberries	Plants true to Name
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Blackberries are easily raised and comparatively sure to crop. Plant in rows 8 to 12 feet apart and 2 to 4 feet apart in the row. Cultivate carefully for one or two years, when they may be mulched. We prefer cultivation, but having farmed, know that a farmer is apt to neglect cultivation in berry time, when it is most needed, so recommend mulch for farmer's patches. When new canes reach a height of 40 to 44 inches cut the tops off. This will cause them to branch out. Immediately after fruiting cut out all old canes and all weaklings of the new ones, giving all strength to the remaining canes. **Keep them in rows.** This will be easily accomplished by going through the middle three or four times during the year and pulling up all shoots starting up outside the rows, which may be allowed to get 2 or 2½ feet wide. The above mentioned pruning will almost double your yield, while the keeping them in rows lessens the work of picking very much, and both combine to produce a high quality of fruit. As soon as the buds begin to push in the spring, that any damage done by freezing may be detected, clip the ends of the side branches back to 10 to 16 inches, giving canes a tree form. They produce just as much or more fruit of better quality and are much easier to pick for this last clipping. Handled in this way, one row 150 feet long in a good season will easily produce 50 gallons of berries. Be sure to keep in rows not more than 2½ feet wide and keep free from weeds.

Early Harvest—Is the best early blackberry. Sufficiently tested to warrant recommending. It is a good early.

Leucetia Dewberry—Might be mentioned here. It ripens almost as early as raspberries, stands our climate fairly well, and produces well; fine large fruit, larger but not so sweet as blackberries. Must be trained to a trellis (three wires) or posts to produce good results. It is the only dewberry we can recommend.

Kitatinny—Is very like the old Lawton, i. e., large, late and rather sour,

but is quite hardy, while Lawton often winter kills.

Rathbun—Is half dewberry in nature, rooting from the tips as do black raspberries, but suckers up very sparingly. By all odds the largest blackberry we have ever grown, sometimes attaining the size of hulled butternuts. Not a heavy enough cropper for a patch sort. Use only as a novelty.

Snider—Is the Ben Davis of the blackberry and needs no description.

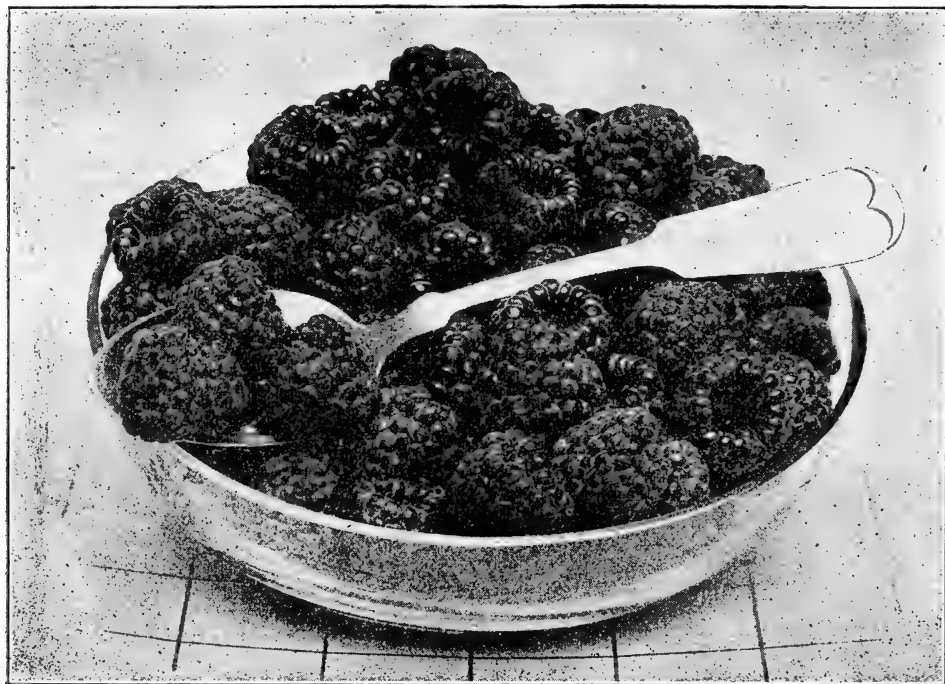
Plants true to Name	Raspberries	Plants true to Name
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Raspberries, while not so easy of culture as blackberries, produce better returns for the extra care, and are always in demand at a good price. Plant in rows 6 to 8 feet apart, with plants 4 feet apart in the row. Cultivate carefully. The first year canes will lie on or near the ground, but afterwards will stand erect if headed in. It is well to put up a light stake to each plant the second season to keep fruit off the ground, or permanent trellis may then be put up instead of a year later; but owing to weakness of canes at this stage they will need to be tied to the wires. When the young canes get above trellis cut them back to 36 to 40 inches, or if no trellis is used cut them 6 or 8 inches lower, that they will stand up. Immediately after done fruiting cut out all old canes and all new ones except from three to five of the best ones in each hill; never more than five should be left. By thus getting rid of old canes and weaklings at this season the canes left for fruiting get all of the nourishment that the plant makes, becoming strong and

ripening their wood so much better, are not so likely to winter kill or suffer from other pests. These canes will become quite strong, and throw out side branches, reaching to the ground. These branches should be left until spring. When plants have advanced far enough to ascertain what portion, if any, have been injured by frost, cut back to 10 or 12 joints, allowing each cane a cane form. If any of the branches have rooted at the tip, which is likely, remove these plants; never allow any plants to grow outside of original hills. Plants set between hills or outside of rows only tend to lessen the crop, both in quantity and quality, besides increasing the labor of caring for the patch, and invites disease.

Only take five or six crops off the patch, after that a new planting will pay much better.

When mulching is to be practiced instead of clean cultivation, every third middle should be 12 feet wide, to allow room for driving through to distribute the mulch material. This applies to grapes and blackberries as well as to raspberries.



Cumberland

RED SORTS

Cuthbert—Old fashioned red, is still an excellent sort, measured by results. It is bad to sucker up, but is the standard red still.

Loudon—This is a new red that is well liked by some. It is larger and firmer than Cuthbert, hence a better shipper. Not near so bad to sucker up or "sprout." Unfortunately it is not so productive as the others.

Miller Red—This is a newer sort than Cuthbert, and is earlier. It is claimed to fruit as well and be as hardy as that, even hardier. We have never fruited it here.

YELLOW

Golden Queen—This is very like Loudon in habits, except that fruit is a golden yellow. Excellent flavor.

The above sorts we think cover the field, so far as worthy, in sorts, colors and seasons. We can supply any other sort desired.

BLACKCAPS

Cumberland—This new berry seems to be the "best yet" in blacks. It is fully as fine as Gregg and, as good a bearer as Kansas. You will make no mistake in planting this.

Gregg—The old standard. Good, large and of excellent quality. Good shipper.

Kansas—Very heavy bearer, earlier than Gregg, not quite so large or firm but one of the very best blacks.

Palmer—Perhaps this is the best of the earliest sorts. Well worth planting.

PURPLE SORTS

Cardinal—This new berry seems as

much ahead of the other purple sorts as Columbian was ahead of Schaffer. It is the only purple that we feel like recommending to our customers, although we can supply the others if you want them. This is a fine large berry, firmer and better to pick than any purple that we have ever tried. It is the most free from Anthracnose, the worst enemy of the raspberry, of any sort that we have ever fruited.



Downing

Plants true to Name	<h1>Gooseberries</h1>	Plants true to Name
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It is essential to keep currants and gooseberries clean, particularly to keep sod from setting in the hill. Weeds or sod in the hill induce punk and other fungus growths at the crown. Every spring or at least each second spring it is well to remove the earth about the crown and carefully remove fungus growth and dead stubs. This will lengthen the life and increase the production of your plants. Prune each spring, removing the lower branches and weak and diseased shoots, as well as enough of the top to relieve any congestion, and let the sun in. This will do much towards lessening the liability to mildew in gooseberries. Both should have a sunny location to produce the best results.

Gooseberries are among the healthiest fruits we can eat. A good slice of gooseberry pie will often drive away the blues quicker than the doctor's medicine, besides its cheaper, handier and more pleasant to take.

Plant in rows 5 or 6 feet apart, with plants four feet apart in the row.

Downing—A larger, sweeter and thinner skinned sort, perfectly green when ripe. A very fair cropper. It is by far the most generally planted of all sorts. Not quite so sure to crop, but much superior in quality to Houghton.

Houghton—Is an old sort, rather small in size, but very hardy, and a regular cropper. Prune well and berries are fair sized.

Pearl—Seems so nearly like Downing that amateur horticulturists can distinguish no difference.

Red Jacket—(Josslyn)—Is the best large red gooseberry we have ever tested. It is an American variety and comparatively free from mildew. Industry, a large English sort, is such a bad mildewer that it is not worthy of planting here.

Plants
true to
Name

Strawberries

Plants
true to
Name

Strawberries are a luxury no farmer can afford to do without. Nothing will bring better returns for good care or so thoroughly disappoint

if neglected. Plant two rows of pistillate sorts to one row of staminate, or staminate alone can be fruited successfully but pistillate sorts alone will be sure to disappoint you. Plant rows three or three and one-half feet apart, plants twelve to sixteen inches apart in the row, and be sure to keep them in rows. Cultivate thoroughly, keeping all runners up and down the rows. Of course your rows will get wider as fall advances, but keep them in rows and keep them clean. In the spring stretch a cord along each side of the row ten inches apart, digging up all plants outside these lines and leaving a solid matted row ten inches wide. Cultivate these rows until berries are nearly ripe, then use some clean mulch, fine straw, lawn clippings, sawdust, shavings, or any other like substance that is free from seeds that will bother you in your rows. This should be worked under the overhanging part of the rows to keep the fruit clean, as well as to retain moisture. You will be surprised at results if you have never tried this method. One season I kept account of five rows a little over 100 feet long, less than 110 feet, and besides supplying our table abundantly, and a good many canned, I sold \$35 worth of berries off these rows.

Immediately when the fruit is gone mow the rows with a scythe, and as soon as dry, burn the straw, together with the mulch between the rows. This not only lessens danger from disease and insect pests, but kills a great many runners just starting, lessening the task of keeping the plants in rows. Each spring plant new

rows. The second spring treat the plants same as first, except in that after the crop is taken off, destroy the rows. Never let plants bear the same year you set them if you expect to take plants off the rows for your next spring's setting, as unpicked berries might produce worthless seedlings hardy enough to "take" the original sorts. Never attempt to take more than two crops from your rows. It is much easier to plant new rows than to keep these old ones clean, besides all the better plants are dead, and more than likely these rows are full of white grubs.

Sorts

We do not find the great difference in the various sorts tested that some growers claim for them. We do find that some sorts are infinitely more productive than others, but the season of ripening, while differing, is not nearly so great as most growers claim—at least not with us. While we have tested several of the earlies, we find none of them that are much earlier than the regular sorts, and all of them so far tested are not nearly so productive. Same thing may be said of the extra lates. We do not find them as late as described, here. Most of these are better croppers, however, than the Earlies. We describe what we think to be the best in their respective classes. Remember that we can supply other sorts, especially if ordered early, but the sorts listed we expect to keep in stock.

Bubach—Still an excellent berry for the home patch. Fairly early and of excellent flavor. An immense cropper. Berries large till end of season when they grow smaller. Not so firm as some and not so good to ship. Pistillate.

Early Michigan—This is earlier than above and better fruiter. In some sections it is claimed to do well. With us it is not a success. Staminate.

Gandy—Plants large and healthy; fruits immense sized, beautiful shape and form, color deep, glossy red, an immense cropper of highly flavored fruit. It is the best late that we have ever tried. Not much later than the mid-season, we find. It is staminate and one of the strongest fertilizers in the whole list. It is so like Brandywine that we have much difficulty in distinguishing the two. We find that it is less liable to leaf rust than Brandywine so we advise it be used. One of the very best.

Haverland—This is a large to very large wedge shaped berry healthy in plant, fruit fairly firm and of good flavor. When fertilized it produces immense crops. Its only fault is that some of the fruits are green tipped. A trifle later than Dunlap. Pistillate.

Jessie—Much like Dunlap in many ways. Staminate.

Michael's Early—Poor fruiter and but little earlier than Bubach. Quality of fruit good but small and mis-shapen. We do not like it.

Senator Dunlap—Still the greatest Jerry of the whole list for all around use. Hardy in plant. Mid-season,

large, firm, well-shaped berries of good flavor, a good shipper and immense cropper. The best for all purposes we believe. Staminate

Sharpless—The largest fruited sort that we have ever fruited. Very strong plants, berries so large that we have had 11 of them that filled a quart box. Like all of the other extra large sorts, it does not produce so many quarts per acre. Staminate.

We also grow Bismarck and several other sorts. One unnamed seedling that we have is worthy—almost as good as Dunlap, we believe. Have fruited it several years.



Senator Dunlap

Plants
true to
Name

Currants

Plants
true to
Name

As both a market and a kitchen fruit, the currant has taken a wonderful advance within the last few years. The demand for plants is increasing rapidly.

Among the many sorts that are grown, we mention only the following, which we have tested and found to be as described, but any sort desired will be supplied on a short notice.

Cherry—An older sort. Large berries but clusters not large.

Fay's Prolific—This is the standard currant. It is a good one. Bunches long and berries a good size. One of the best.

Lee's Prolific—Probably the best black currant. These black currants are not at all like the reds in flavor. The taste of the fruit is much like the taste of currant wood. Flavor of the fruit not much liked by most people. Said to make good jam. Currant worms do not bother these plants.

Pomona—This is a new sort and a good one. It is a heavy bearer of good sized berries, larger than Fay, sweet and of excellent flavor and the plant is hardy. Be sure to try this sort.

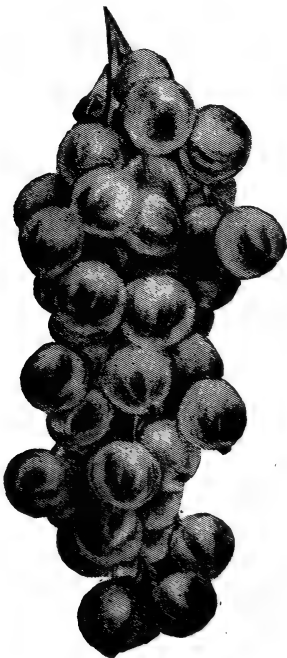


Fay's Prolific

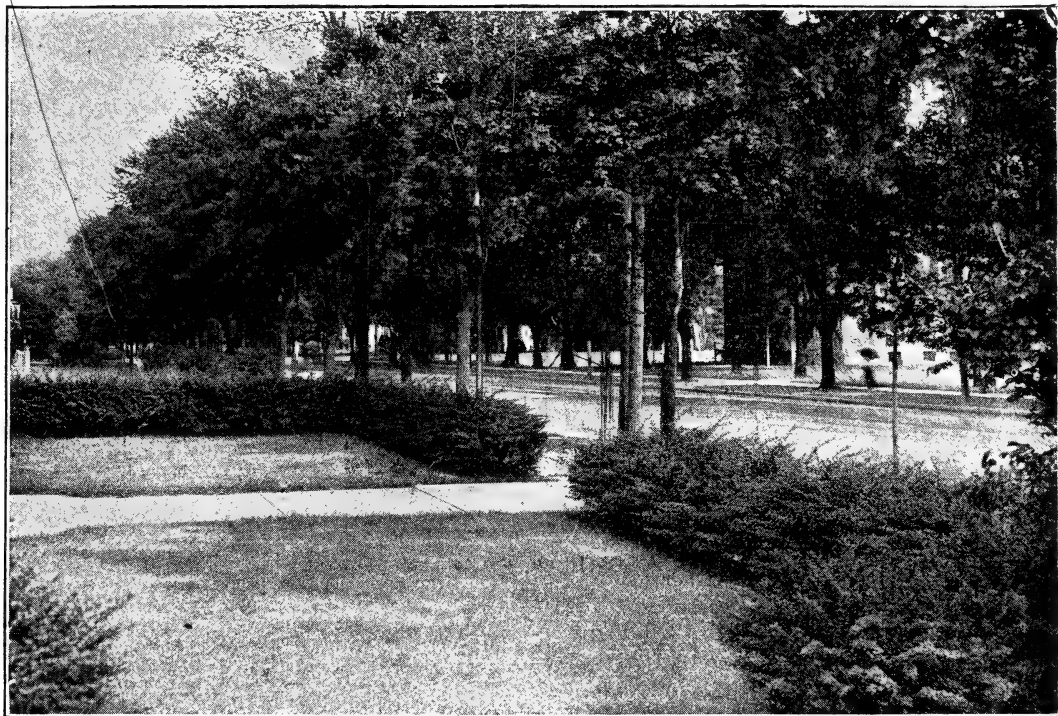
Perfection—This seems to be what its name implies. It is as good as the best that we have tested in all ways and better in some ways. Large berries and bunches and lots of them. Plants very hardy. It seems to be the best all around currant.

Red Cross—This new currant is the largest berried that we know of. The fruits are of excellent flavor, also. It has the fault of overgrowing itself on rich soil. On ordinary soil it is an excellent sort. Try it.

White Grape—This is an excellent white currant. White currants are not so tart as the red and therefore better for table sauce. When cooked they turn red and are as nice for jelly as the reds and equally as hardy and as productive.



Perfection



Plants
true to
Name

Ornamentals

Plants
true to
Name

Too few people appreciate the value of ornamentals. A wind break brings the highest rent on the land in the amount of feed saved to cattle, not to account the better, healthier condition of stock both in summer and winter. Besides this the health of the family is better, if it is located near the house. It adds to the value of your farm, is a source of supply of much wood as the growth is thinned out. At the present price of posts, a grove of osage orange or black locust would bring good returns even on high priced land. One farmer said \$500 would be no inducement for him to part with 8 sugar maples standing on his lawn. These trees were planted by a young man about 20 years old and he is yet alive and has a prospect of many more years of life. Yet people will say, "sugar maple is too slow, a man can't plant it and ever expect to sit in its shade." In a recent real estate deal the buyer said: "I am giving you that extra \$100 for that cut-leaved weeping birch tree on your lawn" (20 year set.) We might cite you to many more cases, but why go on? It is self evident that ornamentals of all description pay big returns in pleasure and money value. Below we describe a few varieties.

We can supply any ornamental tree that grows, at a reasonable price. We list the principal sorts that we grow and keep in stock. If you want **larger or smaller** sized trees, or want a **quantity** of them, ask us for special quotations. We sell **millions** of ornamentals, mostly in small sizes, yet ship several car loads annually of **larger trees** to customers who want this size. Let us have a list of your wants, be it large or small, for our special quotations.

Ash—These are large growing trees shapely and free from disease. Their leaves do not make much litter in falling, quite hardy and among the best

for outside of yard or an avenue along drives. Moderate growers. The most common sorts are White (or gray) Green and Blue ash.

Ash, Am. Mountain—It is the admiration of all visitors at resorts. Tree is a moderate grower attaining a height of 20 to 35 feet. Bark smooth and glossy. In early fall its wealth of large clusters of seeds turn a beautiful bright red and remain on the tree well into winter. Be sure to include a few of these in your order. Our stock is direct from Michigan where the finest specimens we ever saw thrive.

European Mt. Ash—Is a smoother tree, very symmetrical and fine dense foliage, yet does not produce so many nor such beautiful fruits.

Birch, Am. White—(Paper or canoe birch)—Tree an erect symmetrical grower with a silvery white bark. Very showy in winter and all year for that matter. Not so good as some trees for shade but a beautiful thing in winter or to intersperse with evergreens.

European White Birch—Is very like the American sort, only rougher. Visitors to northern Michigan are charmed with the aspect of the paper birch scattered along hillsides or among evergreens.

Birch Yellow—Much like the above only not so showy and a slightly coarser tree.

Red or River—A beautiful, graceful growing sort with its long, slender branches gracefully drooping, much denser, better for shade and more rapid growing than either of above. Rather difficult to transplant.

Beech, American—Nice trees, but very slow in growth, dense hard wood. Bears the edible beech nuts. Bark smooth and spotted.

Box Elder—A very rapid growing dense shade tree. Not symmetrical in growth. Female trees are very great producers of seed. We usually have a stock of budded **male trees** that never produce seed. Very well known by every one and much planted owing to the rapidity of its growth. Male trees better shaped than female.

Buckeye—(Am. Horse Chestnut)—A beautiful native tree, attaining a height of 30 to 40 feet. Fruits are contained in a burry husk. Extensively used as a lawn tree. Do not plant this where stock can eat the fruits or twigs as it is poisonous to stock. The **European** variety is a similar tree finer in both twig and foliage but not quite as fruitful here.

Dogwood—White, Cornus Florida—A large shrub or undersized tree bearing a

wealth of white flowers in the spring, followed by red berries which stay on the tree a long time.

C. Stolinifera—Or red twigged dogwood; is used for contrast with evergreens or white barked trees, for winter effect. The latter is a shrub.

Elms—Are among the most commonly used street shade trees owing to their rapid growth, good shade and storm resisting properties. The **White elm** is usually used. **Red**, or slippery, is less frequently used.

Gum—Sweet—A beautiful rough barked tree of large size. Foliage oddly shaped and of the most beautiful scarlet tinged color in the fall. Not hardy north of 40th parallel in severe winters.

Gum—Black or Sour—A beautiful tree of soft white wood. Foliage similar to magnolia or pawpaw, hard to get started yet pays well for the effort. Hardy.

Hackberry—Nettle tree—A well known rough barked tree excellent for street or where a large tree is desired. Very hardy and resists storms to a high degree.

Haw—Red or Hawthorn—A low growing tree forming very dense round head where it has room, covered in early spring with white fragrant blossoms followed by edible fruit.

Haw—Black—More dwarf in habit than above. Foliage a deep, glossy green. Blossoms white in early spring followed by edible fruit of black color, which hangs on the tree well into the winter.

Hickory—Shellbark—The hickory nut of commerce. Hard to transplant.

Hickory—Pignut or White—Nuts not edible, but tree a more rapid grower than above. Both are difficult to transplant and small trees should always be bought, as large ones are almost sure to not grow.

Ironwood—Hop tree, Hornbeam—A beautiful undersized tree, quite hardy and graceful.

Judas Tree or Red Bud—A beautiful under-sized tree, attractive when not in bloom, yet admired for its pink blossoms, which envelope it before the leaves appear. Hardy everywhere, fine for a corner of the yard.

Kentucky Coffee Tree—A scaly barked, heavy twigged tree quite odd. Somewhat troublesome about sprouting.

Linden, American—A nice clean, broad leaved, soft wooded tree, much planted for bee food. A nice lawn or barnlot tree.

Larch—American or Tamarack—Looks like an evergreen in summer, but sheds needles in autumn. A graceful fairly quick growing, hardy tree. Wood valuable. Extensively used for wind-breaks.

Locust, Black—Of all post woods, this is the most rapid grown. Beautiful and very fragrant when in bloom. It is bad about sprouting, otherwise a good lawn tree. A few acres set to this will in a few years produce posts for a large farm since it will soon replace itself when cut off. We can supply seedlings of these by the millions.

Locust, Honey—Fine leaved, bearing long thorns, unlike above it is of no value for posts.

Maple, Sugar or Hard—The most beautiful, storm resisting, densest and symmetrical of all native trees. Slow growing, yet quick growing sorts may be planted between these for quick shade and later, when the Hard Maples get a good start, removed, thus giving quick shade and eventually, the finest shade in the world.

Soft or Silver Maple—Quick growing but does not stand storms near so well nor is it so symmetrical. One of the most popular of all.

Maple, Norway—Of sugar maple type, large leaves, and quite umbrella shaped top. A beauty.

Maple Schwedlerii or Blood Leaved—This is of the Sugar Maple type, but has the most beautiful deep red foliage in early spring. This beauty leaves as the season advances, although it is somewhat evident all season. This sort is grafted as it does not come true from seed. It will always be expensive, but is well worth the price. We can supply this tree.

Maple, Black or Black Sugar Maple—This tree is very like the regular Sugar Maple, only more rapid in growth, although not a rapid grower. It is much recommended by some who know it well.

Magnolia Accuminata—Cucumber Tree—Considered one of the finest of our ornamentals, both in bloom and foliage. Quite hardy here.

Poplar, Carolina—More of these are now planted than all other shade trees together, largely owing to their rapid growth. We have one outside our resi-

dence lot, 13 years transplanted, measuring 24 inches in diameter a foot above the ground, 18 inches in diameter 6 feet up. Appears very much like a cottonwood, only foliage is finer and tree much more symmetrical in its growth. Should be headed in to prevent their growing too tall.

Lombardy Poplar—Noted for its growing so slender and tall.

Silver Leaf Poplar—Noted for its silvery white leaves, and Balm-of-Gilead Poplar are such bad sprouters that they should never be planted within 75 or 100 feet of where ground is worked.

Poplar, Tulip or Tulip Tree—This beautiful clean tree with its large fiddle shaped, glossy leaves deserves a more general planting. It is hardy and a beautiful sight when in bloom, sprinkled with tulip-like flowers. It is not a young bloomer, but long lived, becoming a great tree.

Prunus Pissardii, Blood Leaved Plum—A beautiful plum with foliage, young wood and fruit a chocolate red all season through. A fine contrast with green foliage.

Paw Paw—Northern Banana—An undersized tree vying with the magnolias for beauty of bloom and foliage. Fruit very rich and sweet. One of the most difficult to transplant.

Peach, Blood Leaved—Very beautiful red foliage in spring and early summer, turning to green by fall. Fruit a small white cling.

Pecans—More shapely, earlier to fruit and easier to transplant than hickory, which it much resembles. You may plant to fruit if you have a soil with no strata so hard that the tap root cannot penetrate it for a depth of 10 to 12 feet. It makes a fairly good tree anyway. Our stock is from selected Texas paper shell seed—the best.

Persimmons—Pretty, undersized trees quite showy when in bloom. Fruit fine when quite ripe. (See under miscellaneous fruits.)

Salisbura—Ginkgo or Maiden Hair tree—This odd little tree is a slow grower, the outer bark gray and loosely fibrous. Leaves are fan shaped and distinct from any leaves we have seen. Hardy.

Sycamore—A majestic white barked tree assuming a nice form when out alone, but roughly formed when in the timber. Also called **Button Tree** or **Palm Tree**. The largest timber tree along the Atlantic.

Sassafras—Undersized tree, noted for its aroma of leaves, wood and roots. Roots used for the time-honored sassafras tree. Fine autumnal hue of foliage. Beautiful black fruit in pink cups or long pink stems.

Willow, Pussy—(*Salix Discolor*)—A beauty in bloom, which occurs in March and April. Long silvery catkins are put out, hence its name. Very showy. A small tree that succeeds everywhere and is attractive after blooming.

Weeping Trees

Birch, Cut Leaved Weeping—This is unquestionably the prettiest tree in existence. Bark is a beautiful silvery white, twigs slender and gracefully drooping when the tree attains a little age. In young trees the twigs do not droop or "weep" nor is the bark white while quite young. It has all of the beauty of our native sort and the drooping branches and beautiful cut leaves added. Quite hardy. Do not plant in a crowded place for best results.

Willow, Kilmernac—This is the Kilmernac grafted upon the stem of the Scotch Willow and the branches from the graft grow downward. Much used as a cemetery and lawn tree, as it never grows tall.

Willow—Common weeping.

Elm, Camperdown—This is top worked like the Kilmernac Willow. In growth and development, it is coarser and grows to a larger spread of top. Valuable either in lawn or cemetery planting.

Mulberry, Tea's Weeping—This beautiful tree is worked like the above mentioned Kilmernac willow. It is between the two in size and development. Much prized as a lawn or cemetery tree.

Mountain Ash—This is top worked like the others mentioned. It is almost as coarse growing as the Camperdown Elm, not quite so large in full development and more irregular, giving it a grotesque appearance.

Plants true to Name	<h1>Evergreens</h1>	Plants true to Name
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By all means plant Evergreens. If not for ornament then for wind breaks, hedges and timber. Two or three rows about your barn or feed lots, will save you hundreds of dollars in feed and health of your stock, not to account your own comfort while feeding, etc. One farmer who planted a double row of Arbor Vitae about his lot only a year ago at a trifling cost, says he would not now part with it for ten times its cost. We must wake up to the fact that our timber is going and going fast. Don't wait till it is all gone. Plant now. We can supply any sort.

We dig with a ball of earth if desired by our customers. For this we make a charge according to the size of the tree, sort, etc. In this way the tree is almost sure of growth. The tree is lifted with a ball of earth on the roots and burlap is sewed about this to keep it on. In planting, the tree is set with the burlap attached and has had no chance for roots to dry. **Never let the roots of an Evergreen get dry.** The sap of evergreens is more or less resinous. Once dry this sap hardens into rosin and no amount of moisture will start the sap in circulation. The cost of this digging and balling varies from 3c to 5c each on the smaller trees, to as much as 75c on trees of 7 feet and up. This makes the trees more than twice as heavy and increases freight, also. We do not burlap unless asked to do so, except as noted as done free.

Arbor Vitae or White Cedar—This is the wood used for telephone poles, posts and many other purposes. It is one of the hardiest, most easily transplanted of all evergreens. Needles are

flattened, making excellent wind breaks. As trees they grow rapidly, tall and symmetrical. As a hedge it grows dense and is easily kept in shape. We can supply this in any size from the smallest

seedling to trees 5 feet tall. Our block of this has been pronounced the **finest ever** by brother nurserymen who have visited us and the general public. Almost every tree in our block of larger trees is a specimen tree.

Arbor Vitae, Chinese—Finer leaves and branches than above while young, but a faster grower and ultimately a coarser tree. There are many special sorts of this, some of them we list below.

Arbor Vitae, Assorted—These are special varieties of the Chinese Arbor Vitae. We mention the most commonly used sorts, but we can supply any of them.

Siberian—A spreading shrub, very dense and gets about 5 or 6 feet tall at maturity.

Globosa—Dense foliage. With a little clipping forms a dense round head. Fine for specimens in lawn or cemetery.

Pyramidallis—Grows very erect, almost into a pillar. With a little pruning it is a beautiful pyramid.

Fir, Balsam—This beautiful evergreen is noted for its greenness in the winter time. It does not turn brown as do so many of the others. Large forest tree, much valued for lumber. Needles are silvery white on the under side.

Juniper or Red Cedar—This is one of our best forest trees. Excellent for posts. It is of a slow growth. A little hard to transplant.

Juniper, Irish—This is undoubtedly the prettiest of all of the small growing evergreens. It grows very dense and

symmetrical, almost a perfect cone, with but very little pruning. Fine for lawn or cemetery. It attains a height of 16 to 20 feet. Shorter lived than most evergreens.

Juniper, English—This is a very symmetrical grower, more like the Irish Juniper, but coarser and larger growing. A nice little tree.

We also have three sorts of **Dwarf Juniper**. These never get over 5 to 6 feet tall, but spread as they get older. These Dwarfs are much used in lawns in front of the house as they never get so tall but what one may see out over them. Also used in cemeteries and for hedging. We do not recommend them for hedging.

Fir, Silver—Very slow growing while young, spreading drooping branches, needles of a silvery green color. To us, it seems to be one of the best of the large trees.

Pine, White—This is the white lumber pine. We are selling large lots of these for forestry purposes. Long, drooping needles, very pretty and fast grower, although not so dense as most evergreens.

Spruce, Norway—This is one of the most common of evergreens. A fine large growing tree. Very hardy.

Spruce, Colorado Blue—This is, without doubt, one of the very finest of all ornamental evergreens. Needles coarser than Norway and a **sky blue** at all seasons of the year but the color is best in the early spring. As the trees grow older the intensity of the blue increases. This is one of our best.

We have many other evergreens in small stock. We mention especially the **Dwarf Box**. This is a broad leaved evergreen like the box trees seen at florists. Plants are very stocky. If you need some of this for hedging, we will be pleased to quote you on smaller sizes. These we can make as low as \$5 per 100, plus the freight from our growers. **Ask for prices on anything in Evergreens.** We can supply most of these very cheap in quantity. In sorts described and some others we have **fine specimen plants** that we will sell at a low price, quality considered. We have not enough of these to list.

We can supply seedlings of many of above evergreens. We supply many of these to nurserymen and large planters. We have our own special collector, who collects these for us from the Michigan forests. We use these to line out in nursery rows. We cannot ship these as early as stock grown here. It is usually in May when these arrive here. If we do not list what you want, ask us to quote.

We will be pleased to quote on **White Spruce, White Pine, Balsam Fir** and several other sorts, in this grade of seedlings, if interested, or in larger lots.

Order Early While Varieties are Complete

Plants true to Name	Shrubs	Plants true to Name
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We have the most general assortment of the most worthy sorts of these of any nursery of less than 100 acres in the state. At least that is what state inspectors tell us. These are in so many different lines that something may be found that will please and is needed by almost everyone. We describe some of the sorts that we grow. If you do not find what you want in this list, ask for it. We probably have it. If not, we can get it soon and at the right price. We have tested many sorts that are much advertised by some growers only to discard them as they were not adapted to the wants of our customers.

Acatia—Moss Locust—A bush of merit. Blooms all of the earlier part of the season, in light rose colored racemes similar to the blossom of the Wisteria except in color. Stems covered with hair resembling thorns, yet it does not prick the hand. The bush has the fault of sprouting.

Almonds, Double—White and pink, are too well known to need description.

Althea—Rose of Sharon Tree form, height 4 to 10 feet, begins blooming about August or September and continues until late in the fall. Flowers resemble Hollyhock blooms and come in a time of year when everything is dry and sere. Grafted sorts come in several colors and are usually double, while seedlings are usually single. Be sure and plant some of these. **Varigated** is beautiful in foliage but the buds seldom open into blossoms.

Barberry—The purple leaved sort is quite ornamental; both purple and green are fine for hedging. Besides the ornament, they bear abundant crops of fruit which is a perfect substitute for cranberries only that these have seeds. The **Japanese Thunbergii** is pretty for hedging.

Button Bush—Native along streams or ponds. Of the willow type. Balls (buttons) quite surely when young. 6 to 8 feet.

Bladder Nut—In size and habit like Wahoo. Yellow, bell-shaped blossom early in spring followed by triangular, open seed-pods containing two to eight loose seeds which rattle when shaken. Quite odd.

Currant, Missouri—or flowering, well known on account of its fragrant, yellow blossoms. The plant sprouts.

Calycanthus—Sweet-scented shrub or **Carolina Alspice**. Odor of sassafras

type; has a deep-red, very fragrant blossom.

Deutzia—This shrub is worthy of more extensive planting. A low growing shrub, hardy and a free bloomer during early spring

Elder, Common—Very hardy grower anywhere. Large corms of white blossoms almost covering the bush, which are quite fragrant, followed by black berries, excellent for pie or wine. See fruits.

Euonymus—(Wahoo)—or Strawberry tree. A nice little tree-form bush bearing yellowish red tripods, which burst open in late fall showing blood red berries inside. Quite ornamental during first half of winter.

Forsythia—(Yellow Bell)—Bears a wealth of yellow bell-shaped flowers very early in the spring, sometimes flowering buds winter kill partly.

Gooseberry—Wild, more valued for its fruit. Well known.

Hydrangea—(Paniculata Grandiflora)—Hardy as a Lilac and succeeds anywhere, but flowers remain pretty longer if given some shade and plenty of water. Undoubtedly this is **queen of summer and fall flowering shrubs**. In July it puts out great spikes of flowers; greenish at first then pure white resembling a snowball bush. Flowers sometimes 6 inches at base tapering at the end 8 to 12 inches long. Later in the season these turn to a pink color and still later green, remaining pretty, if not too much exposed to the sun, until frost. Can be grown either tree or bush form. By all means plant this grand shrub on your lawn.

Hydrangea, Aborescens Sterilis—Hills of Snow—The new hydrangea that one reads so much of now-a-days is claimed to be a decided improvement over the

Paniculata Grandiflora that we know and love so well. If it is, it is a dandy, that's all. We have it in several sizes. We have not tried it out enough to describe it well, so will not attempt to.

Hydrangea Aborescens—An odd native shrub, blooming in corm instead of panicles.

Hazel, Am.—A native shrub bearing the hazel nut of commerce. Extremely hardy.

Honeysuckle—Upright, or bush. This shrub is standing or bush Honeysuckle, covered with blooms in spring and later glowing with its wealth of red berries which remain on until late summer, making it quite conspicuous; can be trained tree or bush form.

Lilacs—Need no description. Both white and purple are common; well known lawn shrubs. Reds, etc., are grafted sorts.

Leather Wood—A beautiful shrub, native in southern Illinois. The foliage is very attractive. The bark is often used to make whips, it is so tough, hence the popular name "Leather Wood."

Prunus Trilobi—This is a beautiful shrub well worthy of planting. The blossom resembles the pink flowering almond, only much larger, resembling a small rose. It is budded on a peach or plum root and never sprouts. It is a beautiful little shrub all summer through.

Purple Fringe—Smoke tree—A large bush or small tree. For six weeks during the summer it is almost covered with racemes of hairy-like formation, somewhat resembling smoke, hence its popular name. A very odd shrub.

Quince—Japan or flowering—A glow of the most fiery red blooms early, and to a lesser extent late into the summer, particularly on older bushes, very hardy. Be sure to have a "Fire Bush."

Snowball—The common sort is well known and much admired by everyone.

Japan Snowball—(*Viburnum Placatum*)—Is a new sort, lower growing with rich distinct foliage, but not so fine in bloom. A rare plant.

French Snowball—Very like the last only coarser.

Spirea—Several sorts are well worthy of planting. *S. Billardii* has light pink blossoms in spikes that bloom all summer through, but their great beauty is soon marred by excessive hot weather. **Bridal Wreath** blooms while in blossom similar to double buttercups, only pure

white. **Anthony Waterii** blooms in combs, red, like *Billardii* only stands weather better. An excellent sort. **Van Houtii** clusters of white flowers almost covering the bush, a regular mountain of snow in blooming season. It is not perpetual in blooming, yet a pretty shrub when not in bloom. Perhaps the most admired of all spireas and a good shrub.

Sumac, Smooth—A native plant well known. The common sort native here and conspicuous for its rapid smooth growth and bunches of brown seed that remain on the plant all winter. **Dwarf Sumac**, a rougher growing sort that never attains so great a size. **Fragrant Sumac**, the popular sort in parks and extensive home grounds. A peculiar little shrub.

False Indigo, Jersey Tea and several others we have growing, but have not sufficiently tested them out to describe them.

Syringa—Noted for its very fragrant waxy white flowers in the spring; well known and quite hardy. The tree form can easily be kept to a single stem being very desirable.

Tamarix—African, a bushy growing shrub, bearing in early spring pink, catkin-like flowers, giving it a conspicuous appearance. Later little cedar-like needles come, resembling an evergreen, but of course these shed in early winter. A very distinct plant either for hedging or individual specimens.

Tree Cranberry—(Bush Cranberry)—Of the snowball type. It closely resembles a snowball plant, except the flowers are flat instead of ball-shaped, and are followed by red fruits almost as large as cranberries, having a bitter taste, yet it has a market value as a cranberry.

Wygelia—Blooms very full of bell-shaped, pink or red blooms for a season lasting nearly six weeks. The variegated leaf sort is beautiful all season, yet not so heavy a bloomer usually.

Yucca Lily—(Adam's Needle)—A hardy evergreen that will grow anywhere excepting in very wet places. Its long sword like leaves, ending in sharp hard points and having fibers (thread) along its margin are very attractive. Its height is about 2 feet except the majestic flowering stock which rises 4 to 5 feet and sometimes the spike of flowers at the upper end measures 18 inches at the base and 2 feet along the stem. Very showy all the season through. It likes sun.

Plants true to Name	Perennials	Plants true to Name
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We list below a few of these. We collect from their native haunts hundreds of thousands of the beautiful native perennials annually. These listed we have, in a small way, in the nursery, bowers and forest nursery here and can get them out at any time that it is safe to handle them. Let us figure on your wants in perennials, either nursery grown or collected.

Adder's Tongue Violets—Also locally known as **Deer's Tongue**. These are among our prettiest native perennials. The mature plants have two spotted leaves and the flower stem comes out between these. They bloom in early spring. Should be planted any time between last of May and October. Plant in open shade 6 inches below the surface. Each 10c; 10 for 75c; 100 for \$3.50. Either white or yellow.

Bleeding Heart—Well known by all. Each 20c; 10 for \$1.50.

Blood Root—A conspicuous figure on our north hillsides. Plant shallow in good shade, fertile and well drained soil. Plant October to December. Each 10c; 10 for 50c.

Broad Leaved Sage—Old and familiar plant. Grows anywhere. Each 5c; 10 for 25c.

Cat Tails—Grows in swampy ground. Each 10c; 10 for 75c; 100 for \$5.

Columbine—We have the old native sort, still one of the very best. Succeeds best in a light shade. Each 10c; 10 for 75c.

Claytonia, Va.—"Spring Beauties"—Plant in open woods, last of May to fall. Each 5c; 10 for 25c.

Calamus or Sweet Flag—This is a slough plant, but will grow anywhere that it gets moisture. Each 10c; 10 for 50c.

Dutchman's Breeches—Beautiful early native plant. Flowers white, in shape of Bleeding Heart. Planted from June till November. Needs shade to do best. Each 10c; 10 for 50c.

Golden Glow—Familiar to everyone and succeeds anywhere. Each 10c; 10 for 75c.

Hepatica—This is another of our native beauties. While it grows in deep shade, yet it will stand more sun than most of its neighbors. Plant in the fall. Each 10c; 10 for 75c.

Day Lilies—White or blue. Each 20c.

Hoarhound—Used mostly to make up with syrup or candy as a cough cure. Each 10c; 4 for 25c.

Golden Seal—Much used as a medicine and now grown profitably by many. Each 10c; 10 for 75c; 100 for \$5; 1,000 for \$25.

Iris—The old fashioned yellow and blue. Each 5c; 10 for 35c; 100 for \$3.

Iris Viscolor—The old "Slough Flag." Each 10c; 10 for 75c; 100 for \$4.50.

Iris, Dwarf Blue—For hedging beds. Each 5c; 10 for 25c; 100 for \$1.50; 1,000 for \$12.50.

Iris, Dwarf Japanese—Yellow and white colors. Each 10c; 10 for 75c.

Ginseng—The old standard. Some are now making good money growing this and Golden Seal. Each 10c; 10 for 75c.

Lady Slippers—This beautiful native orchid is now practically extinct here. We collect many thousands in the northern swamps annually and keep a few here for our retail trade. To do well they need shade, well drained rich land, much the same as ferns. We have C. Spectabile, the large white and pink; C. Pubescens, the large yellow; C. Parviflorum, the smaller yellow; C. Acuale, the brown one. These are sold according to the number of flowering crowns on a plant. Single crown plants at 15c; plants of 2 to 4 flowering crowns, 15c per crown. If you want several of these or strong plants, ask for special prices. Most of our business in these is in the wholesale trade.

Lillies-Of-The-Valley—Each 5c; 10 for 25c; 100 for \$1.75.

Old Man—Familiar fragrant old plant 5c and 10c each.

Phlox—Hardy perennial sort. Red, white, lavender and pink. Each 10c; 10 for 75c.

Peonies—We have the red, white and pink. Also the new **Fringed Leaved**. These we sell at 10c and 15c each, in

the ordinary sorts; 20c and 25c for extra large plants. The **Fringed Leaved** sort we sell at 25c for divided plant. Large plants of this at 50c.

Peppermint—An old family remedy. Each 5c; 10 for 30c.

Squirrel Corn—Like Dutchman's Breeches except that the blossom is red something the color of Bleeding Heart. Root is also a corm instead of scaly bulb. Does well here, but seems to be not so sure of blooming as the Dutchman's Breeches. Each 5c; 10 for 30c.

Showey Orchis—(O. Spectabilis)—One of our prettiest native orchids. Grows in fairly deep shade, much the same as ferns and Lady's Slippers. 10c each; 10 for 80c.

Spear Heads—Grows in the edge of small streams. Each 10c; 10 for 80c.

TRILLIUMS

Should be planted from late June till frost.

Trilliums—Nivale—The little white one that is so conspicuous on our north hillsides very early in the spring. Each 10c; 10 for 75c; 100 for \$5.

T. Recurvatum—This is the brown one that grows in open woods and blooms from May till July. Each 5c; 10 for 40c; 100 for \$3; 1,000 for \$20.

T. Grandiflorum—The largest, prettiest of all of this family. Grows in places like last named. Each 10c; 10 for 75c; 100 for \$4.

Dritoma—See bulbs.

Violets—We have only the native hardy sorts. In colors white, yellow and violet. Yellow and violet each 5c; 10 for 40c; 100 for \$3; white 10c each; 3 for 25c. Don't forget that we can

collect almost any native perennial for you.

HARDY FERNS

We carry a line of these here to meet small retail orders, but can get them in large lots or extensive planting. Let us quote on your wants.

Among others we furnish the following sorts in thousand lots and tens of thousands to some of the largest dealers in this country.

Ostrich Plume—Tall, showy for back of bed.

Cinnamon—Tall, fertile fronds coming first, then the sterile which remain.

Royal—Tall, rough and rugged. Fertile fronds distinct from sterile.

Eagle—Tall, sometimes 4 or 5 feet. Suckers from roots. Best in open timber.

Lady Fern—One of the prettiest of our native large growing sorts.

Spinulous Wood Fern—Tall finely pinnated fronds, evergreen, 3 feet tall.

Evergreen Wood Fern—Like above, only pinnae entire. We like this best.

Above sorts are all large sorts and we quote these as follows: 20c each; 10 for \$1.50.

Maiden Hair—A delicate umbrella-like fern. Much admired.

Christmas Fern—Our best native evergreen. Parent of the **Boston** fern.

Bladder Fern—A pretty native sort, 1 to 2 feet tall.

Sensitive Fern—Rough and rugged. Succeeds best in open shade.

Interrupted Fern—Like Cinnamon, only finer pinnae. S. and F. pinnae on same frond.

Grape Fern—A very odd little native.

Price on this list of ferns, each 15c; 10 for \$1.00. Most sorts \$3.50 per 100.

If you want to know more of these, write us. If you want cheaper plants we can supply them. If you want extra strong plants, we can serve you. If you want these or others in thousand, or ten thousand lots, we will be pleased to meet all competition on them.

All of these are hardy sorts, and may be planted out of doors, wherever ferns will do well. Those marked evergreens, remain green all winter and until late the following spring.

Complete Price List of all Trees and Plants Listed Will Be Found in the Back of Catalog

Plants true to Name	Vines, Creepers	Plants true to Name
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Vines are needed in many places where the owner never thinks of placing them, but would gladly plant if suggested to him. Old snags of trees may be made "things of beauty" in a few years. Porches or windows often need a vine of some sort to break the sun off as well as for ornament. Piles of rubbish are easily covered in a few years. Walls and porches may be covered or shaded. A good vine over a trellis to keep the sun out of a spring is often valuable.

Bitter Sweet—(Celastris)—"Staff Vine." This is excellent for the same uses as Wisteria, only it will succeed where the latter will not. It is at home in a hedge fence. Covered with brilliant seed in earlier part of winter very like the seed of Wahoo and much valued for this winter effect.

CLEMATIS

Under this head come a variety of plants, each best suited for certain places.

C. Jackmanii—This is the beautiful **Purple Clematis** that one sees in pretty yards. May be trained up a trellis on a porch if not planted close enough to be under the drip. Succeeds best on a trellis in an open place in the yard.

C. Henryii—The large white. Like above in many respects but grows ranker; flowers much larger but not so abundant.

C. Mad. Andre—This is another of the large flowering sorts, but the color is red. About the same growth as Jackmanii, perhaps not quite so strong. Flowers are smaller than either of above. All three are perpetual bloomers. In May they have a heavy blooming spell and again in the fall, but old plants are seldom without some bloom at any time during the season.

C. Paniculata—This is the white Japanese sort. A much better viner than either of the large flowering sorts and better as a porch vine. Only has one blooming season—late in the summer when it is covered with white blossoms that are very fragrant. The vine is a beauty all season. After the bloom is gone the plant is covered with bronze seed, also quite ornamental.

C. Virginica—"Virgin's Bower."—This is our native clematis. It is the strongest viner of all. At home in thickets, but may be used wherever the last one fits.

Cinnamon Vine—This is a tuberous bulb that is hardy. The top is something like a bean vine only a much stronger climber. Each 10c; 10 for 75c.

Grapes, Wild—This is an excellent climber for covering old trees, spring houses, fences, etc. The shade is of the best, not to account the fruit. Each 15c; 10 for \$1; 100 for \$7.

Hop Vines—Need no description. 10c each; 10 for 75c; 100 for \$5.

HONEYSUCKLE

This family is a useful one and a pretty one as well. We will describe the sorts that we think will fill all needs in these.

Chinese Trailing—This is an ever bloomer. It has two heavy blooming seasons, one in early summer and another in late fall. There is rarely a time that blooms may not be gathered off an old plant up until heavy frosts. Bloom white when first open, turning to a cream color. Very fragrant. Vine almost an evergreen. South of here it is evergreen. It needs wires or some kind of trellis to twine about. Excellent for covering porches, etc., and also makes a nice fence by stretching a few wires and planting along these.

Variegated Leaved—Like above only that leaves are variegated with yellow markings. Not so good a bloomer.

Monthly Fragrant—A bloomer at intervals all season. Fragrant. Not so strong a viner as either of above. Will do to cover windows, fences and as individual specimens.

Red Trumpet—This is one of the very best where not too much climbing is needed. Like above in habits. The freest of all in bloom. It is simply a glow of red all season. Blooms have no fragrance.

Yellow Trumpet—Like above in all ways except that it is yellow and is not so free to bloom.

Wild—Yellow, but a stronger and prettier bloomer than the last. It only has one blooming season. Fragrant. The last four are covered with bright red berries from mid-season till frost, in addition to bloom.

Ivy, American—Virginia Creeper—One of our best climbers. Clings to brick, stone or concrete. Will cover very tall buildings.

Ivy, Boston—(English)—Much like above only of finer vines and leaves. More fan-shaped in its climbing.

Ivy, Poison—Also known as "Poison Oak" and "Poison Sumac." A good climber and pretty, but some people are poisoned very readily by coming in contact with it.

Roses, Climbing—See under Roses.

Trumpet Creeper—This is perhaps the grandest of all of our American climbers excepting, only, the wild grape. It

grows anywhere, clings to anything and is a profuse bloomer. The worst objection to its use in many places rests in its robust habits and its habit of scattering its seed so badly, getting it started where it is not wanted.

Wisteria—These are fine vines but will not cling to surfaces. Must have some wire or small stem to twine about. Grow almost as large as Wild Grapes and used for much the same purposes. Have no tendrils like grapes, clinging by twining. Bloom for a long time in long racemes.

Wisteria, Am.—Purple. One of the hardiest and prettiest. Free bloomer.

Wisteria, Chinese—White. Hardy, not so early to bloom.

Wisteria, Chinese—Blue. Hardy, not so early to bloom.

Do not forget that we can furnish any vine that grows.

Plants
true to
Name

Roses

Plants
true to
Name

We grow these here, mostly. We have selected these as the best among the many sorts that we have tried, for out of door planting. We can supply any sort but these we try to keep in stock.

CLIMBERS

All listed are hardy. We are often asked for Everblooming climbers. We can not supply these. We have tested several of them and find that none of these that really are everblooming, are sufficiently hardy to stand our winters. For our southern customers who wish to try them, we will secure them. None of the real hardy climbers are perpetual bloomers.

Baltimore Belle—This is a good climber and a free bloomer. In color it varies from almost a pure white to almost a solid flesh. This variation is due to certain seasonal conditions. Usually described as a pure white.

Dorothy Perkins—This is a new one and a good one. Color shell pink. A vigorous grower. Canes not so coarse and heavy as most climbers. Flowers in clusters after the fashion of the ramblers.

Prairie Queen—One of the older sorts that is still very good. A vigorous climber and of good habits. Color Pink-rose.

Rambler, Crimson—This is by all odds the prettiest of all of the climbers. More of this is sold than of all others together. Blooms in immense clusters and flowers of the brightest crimson.

Pretty for a long time. The standard of beauty for a climbing rose. Hardy and a good climber.

Rambler, Philadelphia—This is claimed to be an improved Crimson Rambler. We do not find it better, but as good.

Rambler, Pink—Blooms in clusters color light mottled pink.

Rambler, Yellow—In bloom like the others, but clusters not so large nor full. Not a real yellow, but bordering on it.

Rambler, White—This is not so heavy caned, nor so good a climber as the others. Blooms in clusters of almost pure white.

Mary Washington—Is also an excellent climber, but does not belong to this class, as it is of the type of Tea roses. It is described there.

HYBRID PERPETUALS

This class of roses are almost as hardy as the old fashioned June roses. Of course, they will do much better with good care and last longer, but they are very hardy and free bloomers. It is well to prune them pretty severely each spring to induce new wood growth. All blooming is from new growths.

General Jacqueminot—Commonly called Gen'l. Jack. A very beautiful double flower. Blooms freely in season and again in the fall with a few flowers between. Color a deep red and one of the standards.

General Washington—Not quite so large as above in bloom or plant, but a much freer bloomer and deeper color. It is not long without blossoms at any time if in good condition. One of the best.

We can secure any other sort, but these we undertake to grow in sufficient quantities to meet our trade. Sometimes we must buy some. We know of no white that belongs to this list. Above sorts cover the field pretty well as to color and size.

HYBRID TEAS

This class of roses are not so hardy as either of the others. We advise that these be planted in cultivated beds. Usually the tops winter kill unless given some protection. Even if they do not kill back, it is best to cut them well to the ground. They do better. In size of plants they are much smaller than either of the preceding. In blooming they out do the hybrid perpetuals very much. The flowers are so delicate that they are admired by all. We are describing the sorts that cover the field of color pretty well, and those that we find most reliable. In severe winters these sometimes kill outright unless protected.

Baby Rambler—This is not a climber at all. It is simply called "Rambler" because it blooms in clusters like them. It is one of the hardiest of this class and an immense bloomer. It is not so pretty as the others out of doors, especially in hot weather. Color, light rose or pink. Best for window gardens.

Clothilde Soupert—This is one of the best of this class. Color, usually white outside, pink center. Sometimes almost a pure white, at other times solid flesh or light pink. Extremely free bloomer. Sure to please.

Etoile de Lyons—In the greenhouse this is a lemon yellow and a beauty. In open culture it is a creamy white. One of the prettiest both in bud and flower that may be grown in the open. Needs more winter protection than the others.

Mad. Masson—This is similar to Gen. Washington in size of plant and bloom, but not so full, and almost a fiery red. It is a good one.

Mad. Chas. Wood—This rose is one of the best in the entire list. It is large in size, well formed and a very free bloomer when well cared for. Color a typical rose.

Paul Neyron—This is a large growing sort. Stems almost free from thorns. Flowers of immense size and lots of them.

Gruss-An-Tiplitz—This is unquestionably the brightest, most fiery colored rose for either out of doors or greenhouse. Blossoms not large as most of this class, but so flashy as to catch the eye. Free bloomer.

Kiserine Augusta Victoria—A pure white rose, unless too much exposed to the sun when it has a slight blush. The best white. Fine in flower and bud. It is as tender as Etoile de Lyons.

LaFrance—This is the best flesh colored rose in the whole list. Beautiful in flower and bud. One of the hardiest in this class.

Mary Washington—This is perhaps the most profuse producer of good blossoms of this class of rose. It does not really belong to this class, as it will develop into a climber in a few years.

SMALL ROSES

We do not start our roses ourselves. They are rooted for us under glass in Ohio. These we line out in nursery rows here as soon as the weather will permit, usually the first of May. If our customers want these small plants, we can supply them at that season. They are taken out of 2-inch and 2½-inch pots. These we will sell you in any sort, if your order reaches us in time to have them come with our stock, or if wanted, in quantity, we will have them shipped direct from the growers.

Roses, any ordinary sort, from 2-inch pots, ready to send out about May 1st. Each 15c; 10 for \$1; 100 or up, F. O. B. our growers in Ohio, you to pay the express charges, for \$6.00.

If you wish it, we can mail these out to you with ball of earth attached at about 4c each. Without earth on roots at about 1c each. Single plants would cost more, but in lots of 10 to 25, the postage would be less than that amount.

These little plants of H. P. and H. T. will bloom the first season for you but there is much more danger of loss than the older plants.

Plants
true to
Name

Tender Bulbs

Plants
true to
Name

Plant in the spring.—Must be cellared in the fall.

AMARYILLIS

Formosisima—(Jakobina Lily)—Deep firey red.

Johnsoni—(Stemless)—Large, red flowers appearing before the leaves.

Balladonna—(Major)—The common sort seen in jardineers. Light, or orange red.

CANNAS

Burbank—Beautiful orchid flowering, yellow, very delicate but soon tarnished in hot sun.

Austria—Much like above, not so rank of growth nor quite so delicate in shade of yellow, slightly mottled with brown.

Florence Vaugan—Mottled with brown and a darker yellow than either of above, more dwarf in habit and stands the sun well. These three yellows are excellent and will not disappoint you.

Allemania—Orchid flowering, scarlet with yellow margin on each petal.

Charles Henderson—Rich scarlet, very catchy color.

All of above are green leaved.

Black Beauty—Foliage of the richest bronze, flowers not so pretty as some but the foliage is superb.

Caladium Esculatum—This plant is much used in bedding and is commonly known as "Elephant's Ear."

DAHLIAS

These we have in colors and in named sorts. We sell most of color collections. In colors we have the following:

Variegated—(White and Violet)—This is a popular sort and stands the sun well.

White—Excellent for bedding or cutting.

Yellow—Large, free, and full bloomer.

Yellow Cactus—Fine for this class.

Dark Red—Approaching a brown, very showy.

Firey Red—Two sorts of these, one small and petals much cupped, a beautiful little flower, the other large, rather loose petaled.

Maroon—We have two shades of this. One very large—the largest Dahlia we know of and a rich maroon, the other medium in size, dusty maroon.

Violet—Stands the sun well.

Gladiolas—We now grow but one grade of these—that known as "Florists XX Mixture." It is made up of almost all light colors. None of the common reds among them.

Hyacinthus Candicans—This bulb throws up a stem that usually begins to bloom early in the summer and continues till stopped by frost. The foliage is somewhat after the fashion of the Yucca Lily. The white spike of flowers is also somewhat like it, only not so tall nor wide spreading.

Tuberose—Dwarf pearl. These fragrant flowers are familiar to all. We do not grow our bulbs but buy the mature ones. Seldom do they fail to bloom. After blooming we discard them as they are so cheap, and the new bulbs must be 2 to 3 years old before they will bloom.

Tritoma—(Red Hot Poker)—Blooms all summer till stopped by frost in a dense pinnacle in stem 12 to 24 inches tall. Are hardy south of here but must be heavily protected to remain out all winter here.

BULBS BEST FOR BLOOMING IN WATER DISHES

To bloom these best, place in shallow dish, put pebbles about them to hold in position and water enough to almost cover the bulbs. After blooming the bulbs are exhausted and of no further value. They may be planted out in the spring and in the fall they will come up. As soon as frosts begin to come, pot them up and place in your window garden. Handled in this way, the bulbs may be used repeatedly. We do not find this as successful as water blooming, however.

Narcissus, Paperwhite—Pure white, very fragrant. Plants about 1 foot tall. Will bloom in about 2 to 3 weeks from the time of placing in water, continuing for 10 days. Very satisfactory for this purpose.

Narcissus, Chinese—Chinese Sacred Lily—Larger and taller than above. Requires a week longer to get into bloom. White with yellow center.
Hardy Bulbs.

HARDY BULBS—Plant in fall.

Sorts marked * must be planted in the fall for good results. Others may be planted in the spring.

Crocus*—These may be planted in the sod with a dibble. Initials or any design can be made with them. By the time the lawn is to be mowed, they may be cut off as they are very early. Four colors: **Yellow, White, Blue and Striped** and **Variegated**. In making designs we advise the use of one color only, as there is a little difference in the time of blooming. Can give colors separate or mixed. Also planted in beds.

Hyacinths*—Bulbs of the 12 to 15 centimeter size, have these in single only, unless specially ordered, as the doubles are not so satisfactory. **Red, Rose, Pink, White, Blue and Yellow.**

Lilies—Double **Tiger Lilies**. Later, double flowered and prettier than single.

We do not grow many of these bulbs but sell the imported stock. We would thank you to get your order to us by October 1st., if possible, that we may be sure to have in stock what you want. We do not carry a heavy stock of these, but good grade, reliable and that ought to please. We would thank you to order early as they do better planted the last of October than later, although they may be planted any time up till the ground freezes.

L. Philadelphicum, the beautiful native sort, **Wood Lily** or **Wild Western Lily**. **L. Speciosum**, white with brown spots—a beauty. 15c; 2 for 25c. **L. Album** (White, Japanese.) Hardest of the Japs. Also **L. Speciosum Album**.

Narcissus*—**Golden Spur** and **Major Trumpet**. Paperwhite and Chinese Narcissus are not hardy and should be flowered in the house in a dish of water. (See Tender Bulbs for Paperwhite and Chinese.)

Snowdrops—"White Star"—Popular old plant, blooming profusely in spring.

Tulips*—We have these in single only, except for special orders, as the singles are so much more satisfactory.

See also **Hardy Perennials**.

FOREST TREE SEEDLINGS

We grow immense quantities of these for our retail trade and for the wholesale trade. Besides our own growing, we have collecting stations in many states and can collect almost any native tree. Our connection with other growers is the best, and we can supply immense lots of seedlings of any tree if you want them, whether it is among the sorts that we grow or not.

	Height	Per 100	Per 1,000	Per 10,000
Box Elder	4 to 6 inch.....	\$.35.....	\$ 2.00.....	\$10.00
	6 to 12 inch.....	.50.....	3.50.....	20.00
	12 to 18 inch.....	.75.....	5.00.....	—
Catalpa Speciosa	6 to 12 inch.....	.50.....	4.00.....	—
	12 to 18 inch.....	.75.....	5.50.....	—
	18 to 24 inch.....	1.25.....	7.50.....	—
Maple, Silver	2 to 3 feet.....	2.00.....	10.00.....	—
	6 to 12 inch.....	.50.....	3.00.....	20.00
	12 to 18 inch.....	.75.....	4.50.....	30.00
	18 to 24 inch.....	1.00.....	6.00.....	35.00
	2 to 3 feet.....	1.50.....	7.50.....	50.00
Locust, Black	3 feet and up.....	2.50.....	12.50.....	—
	6 to 12 inch.....	.40.....	2.00.....	—
	12 to 18 inch.....	.50.....	3.50.....	—

Locust, Black.....	18 to 24 inch.....	.60.....	5.00.....	—
	2 to 3 feet.....	.80.....	7.50.....	—
	3 to 4 feet.....	1.00.....	10.00.....	—
	4 to 5 feet.....	2.00.....	15.00.....	—
Oak, Red.....	1 year plants.....	2.00.....	12.50.....	—
Persimmons.....	1 year plants.....	.75.....	5.00.....	—

TREE AND SHRUB SEED

We collect and sell to nurserymen and planters over **ten tons** of tree seeds annually. We have our collectors so located that if the crop fails in any place we usually can get it from a locality where there is a partial crop. **We are not dealers in seeds**, hence can not always do orders out of the collecting season. If we have your inquiry in time, we can get seeds fresh and first hand for you, and at a low price. Let us quote on your wants.

Plants true to name	<h1>Sundries</h1>	Plants true to name
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SULPHO-TOBACCO SOAP

As a convenient spray this has no equal. We often use it in the nursery and especially on our rose bushes, to keep them in prime condition, not because it is the best thing to use, but because it is so convenient and fits all cases. It kills eating insects, sucking insects, and fungoids. Full directions on each package. Three ounces is enough for $1\frac{1}{2}$ gallons solution, 10c, postage 3c; 8 oz. package 20c, postage 8c. If you ask for it, we will include a booklet **on the window garden**, free with each order.



TOBACCO DUST

This is almost a necessity on a farm. It is used in hens' nests to keep lice out; under carpets to keep the moths out. As a contact poison to kill lice on plants and animals, especially root lice. It is worth all it costs as a root dressing for plants. 5c per lb; 6lbs for 25c; 100lb bags F. O. B. St. Louis, \$3.00. Price subject to change without notice. Ask for prices on lots.

VENEER TREE WRAPPERS

These are indispensable on young trees. In fall, winter and spring they protect the trees from rabbits, in summer from sunscald and singletree scars. They are made of wood veneer 10x12 inches, and when damp, wrap about the tree as readily as paper. Should be fastened on with No. 18 wire and wire just hooked together, not twisted. This enables one to take them off easily to look for borers, etc. Cut a slot on one edge to keep wire from dropping when wrapper contracts. Price, 15c per doz.; \$1 per 100, here; \$6.50 F. O. B. St. Louis.

BUILDING PAPERS

We use an immense lot of papers ourselves for lining boxes, etc., and have arranged to handle the complete line of all kinds of papers made by the Graham Paper Co., of St. Louis. We can either send it directly* from there or from here. The prices on this fluctuates so much that it is impossible to name fixed prices, except one makes them so high as to be safe and we want to wrong no man. All kinds of carpet and felt papers and roofings also supplied. We do not carry this **in stock except such grades as we use**, but have samples of many sorts. Let us have your wants and we will quote you.

CORDAGE

Like paper, we use much of this ourselves and have arrangements with two large factories that make all grades of twine. Let us figure on your wants. We may be able to save you much.

HORTICULTURAL APPLIANCES

We use these and are arranging to supply them to our customers—the kind that we find best. We carry a small stock of **pruning shears, knives, etc.**, and can save you money on your **barrel spray pumps**, if you want the best.

LAWN AND CEMETERY VASES

For some time we have been asked to supply cast iron vases for lawn or cemetery ornamentation. We have arranged with one of the largest manufacturers of these to supply them to our customers. We have 15 designs in vases, and cast iron chairs, hitch posts, etc. We illustrate but 2 of these. If interested, we will send the catalog showing the complete line and we will quote you interesting prices on any of these. Prices named are F. O. B. factory, Tiffin, Ohio.

Height, 50 inches. Diameter of vase, 18½ inches. Width with handles, 34 inches. Capacity of reservoir, 4½ gallons. Weight, complete, 220 pounds. All painted stone color,

Price, without handles.....\$20.00
Price, with handles..... 21.60

All of our lawn vases are fitted with a self-watering device that will keep plants in good condition for from 1 to 3 weeks, according to the size of reservoir and weather conditions. Our complete catalog explains this device and will be sent free on request. Ask for it.

Height, 19 inches. Diameter of vase, 22 inches. Base, 14 inches. Capacity of reservoir, 1½ gallons. Weight 76 pounds.

Price, painted stone color.....\$5.85

One or two of these vases placed upon your lawn in well selected places, filled with nice plants, or ferns, as the location may suggest, will add much to the tastiness of the entire lawn. The cast **settees** will not only add to the appearance but be the source of endless comfort. Let us quote you on any vase or settee.

Height, 50 inches. Diameter of vase, 18½ inches. Width, with handles, 34 inches. Capacity of reservoir, 4½ gallons. Weight, complete, 220 pounds. All painted stone color.

TESTIMONIALS

You will notice that we have inserted no testimonials. In the years that we have been in business we have accumulated a lot of them. In fact, if all from both wholesale and retail customers were printed in one book, it would make a much larger booklet than this catalog. We will tell you why we do not print them. In the first place, this book is much larger than we wished it to be without them by just telling the people what we had, how we raise it and how to plant and take care of it. This we think is much more to the interest of our customers. In the second place, we note that the exploiters of **vitae-ore** publish a lot of testimonials and yet, the stuff that they sell is nothing but ground up rock that chemists tell us could not possibly have the virtue to it that they claim it has. This is a proof to every thinking man that testimonials are of little meaning after all. The greatest **fakir** usually prints the most of them. Either people are fooled or they are forged.

If you want to see our testimonials, we will be pleased to mail you the originals. Of course, we would want these returned. Not all of them, but such as we think will show the point that you wish to know. We do not make idle statements. We stand ready to prove our statements. If you doubt them, we will try to convince you to your own satisfaction. You will notice that we try to describe the sorts by naming their faults as well as their virtues. We aim to tell the whole truth. If you want reference, we can refer you to some customer in your own state, perhaps one of your neighbors.

We refer you to **Bradstreet's Commercial Agency, Peoria, Illinois**; or the **Hopedale National Bank**, of this city, as to our reliability or responsibility. This is reference enough to any man who is acquainted with business methods, although we could give a whole page of them. We consider these references absolutely good and more of them could not make it better.



LAWN AND CEMETERY VASES

See page 48.